

AMAZING STORIES



APRIL 1936

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LABYRINTH

by NEIL R. JONES

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COLDS are dangerous infections - *give them* *Antiseptic Treatment!*

Listerine's success in reducing the number of colds is due to germ-killing action in mouth and throat

Colds are infections. Why not treat them as such—not with harsh drugs powerless against bacteria, but with a fast-rate antiseptic that kills germs quickly?

Fewer, milder colds

People who follow this system may expect fewer colds and fewer sore throats. That has been proved over and over again by scientific tests in which Listerine was used.

The results of these tests begun in 1930 are corroborated by the experience of Listerine users as attested by enthusiastic letters to this company.

Remember, your cold is accompanied by germs, which invade the body through the mouth and throat. Promptly killed or even held in check, they may do no damage. Allowed to multiply, these bacteria are almost certain to get the upper hand. A mean cold or a nasty sore throat often follows.

Kills germs on membranes

Listerine holds such germs in check. When this pleasant though powerful



antiseptic touches the mucous membranes, it begins to kill by the millions the germs associated with colds and throat.

Even 3 hours after its use, vulnerable areas show a substantially reduced bacterial count.

See for yourself

Why not get in the habit of using Listerine twice a day this winter? You will find, as many others have, that you are less susceptible to colds. Many report that as a result of using Listerine they have no colds. Others say they catch colds, but that their colds are so mild that they cause no inconvenience. Lamber St. Louis, Mo.

Listerine
 You may
 at it makes
 ailments.
 using Lis-
 er.

Listerine

- at the first sign of Cold or Sore Throat

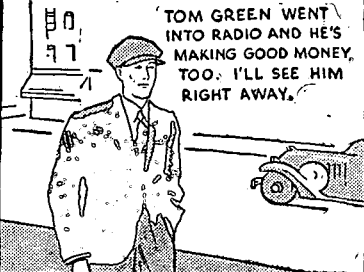
TIP GOT BILL A GOOD JOB!

MY RAISE DIDN'T COME THROUGH MARY-I MIGHT AS WELL GIVE UP. IT ALL LOOKS SO HOPELESS.

IT ISN'T HOPELESS EITHER BILL. WHY DON'T YOU TRY A NEW FIELD LIKE RADIO?



TOM GREEN WENT INTO RADIO AND HE'S MAKING GOOD MONEY, TOO. I'LL SEE HIM RIGHT AWAY.



BILL, JUST MAILING THAT COUPON GAVE ME A QUICK START TO SUCCESS IN RADIO. MAIL THIS ONE TONIGHT



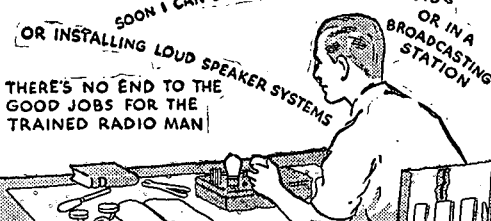
TOM'S RIGHT - AN UNTRAINED MAN HASN'T A CHANCE. I'M GOING TO TRAIN FOR RADIO TOO. IT'S TODAY'S FIELD OF GOOD PAY OPPORTUNITIES



TRAINING FOR RADIO IS EASY AND I'M GETTING ALONG FAST--

SOON I CAN GET A JOB SERVICING SETS OR INSTALLING LOUD SPEAKER SYSTEMS OR IN A BROADCASTING STATION

THERE'S NO END TO THE GOOD JOBS FOR THE TRAINED RADIO MAN



YOU SURE KNOW RADIO - MY SET NEVER SOUNDED BETTER

THAT'S \$15 I'VE MADE THIS WEEK IN SPARE TIME



N.R.I. TRAINING CERTAINLY PAYS. OUR MONEY WORRIES ARE OVER AND WE'VE A BRIGHT FUTURE AHEAD IN RADIO.

OH BILL, IT'S WONDERFUL YOU'VE GONE AHEAD SO FAST IN RADIO.



HERE'S PROOF that my training pays



Gets Job While Training

"Before finishing your Course I was Radio Expert for the largest sporting goods store in North Carolina. Since enrolling I have made about \$8,500. I want to thank N. R. I." - F. Huff, 601 W. 8th St., Austin, Texas.



Makes More Money Than Ever Before

"I am making more money now than I have ever made. My gross income in cash one month was over \$500 and I also did a credit business which ran something over \$200. Any time I can speak a good word for N. R. I. I will be glad to do it." - Otis K. Wolfe, Harlan, Ky.



N. R. I. Course Pays for Itself

"At the end of my first year I more than tripled the cost of my Course. Other fellows need not be afraid to start the Course or fear they cannot pay for it, because it more

MAIL THIS NOW

I'LL TRAIN YOU AT HOME In Your Spare Time For A GOOD RADIO JOB

MAIL THE COUPON NOW. Get the facts about Radio—the field with a future. N. R. I. training fits you for jobs in connection with the manufacture, sale and operation of radio equipment. It fits you to go in business for yourself, service sets, operate on board ships, in broadcasting, television, aviation, police Radio and many other opportunities. My FREE book tells how I train you quickly at home in spare time to be a Radio Expert.

Many Radio Experts Make \$30, \$50, \$100 a Week

Why struggle along in a dull job with low pay and no future? Start training now for the live-wire Radio field. I have helped many men make more money. Hundreds of successful men now in Radio got their start through N. R. I. training.

Many Make \$5, \$10, \$15 a Week Extra in Spare Time While Learning

Hold your job. I'll not only train you in a few hours of your spare time a week, but the day you enroll I start sending you Extra Money Job Sheets which quickly show you how to do Radio repair jobs common in most every neighborhood. I give you Radio Equipment for conducting experiments and making tests that teach you to build and service practically every type of receiving set made. Otis Denton, 14105 Lorain Ave., Cleveland, Ohio, writes: "I picked up \$1800 while studying. The time I gave my Radio work did not interfere with my other business."

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J. E. SMITH, President, Dept. 6CM
National Radio Institute, Washington, D. C.

J. E. SMITH, President, Dept. 6CM
National Radio Institute, Washington, D. C.

Dear Mr. Smith: Without obligating me, send your book which points out the spare time and full time job opportunities in Radio and your 50-50 method of training men at home in spare time to become Radio Experts.

(Please write plainly)

NAME.....AGE.....

ADDRESS.....

CITY.....STATE.....



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AMAZING STORIES

Science Fiction

Vol. 10

APRIL, 1936

No. 9

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Our Cover depicts a scene from "Labyrinth"

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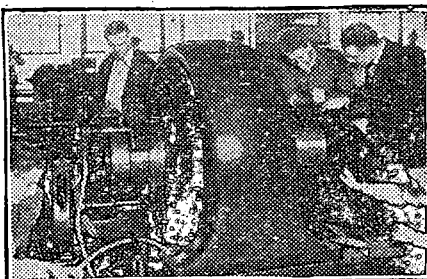
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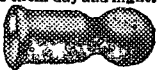
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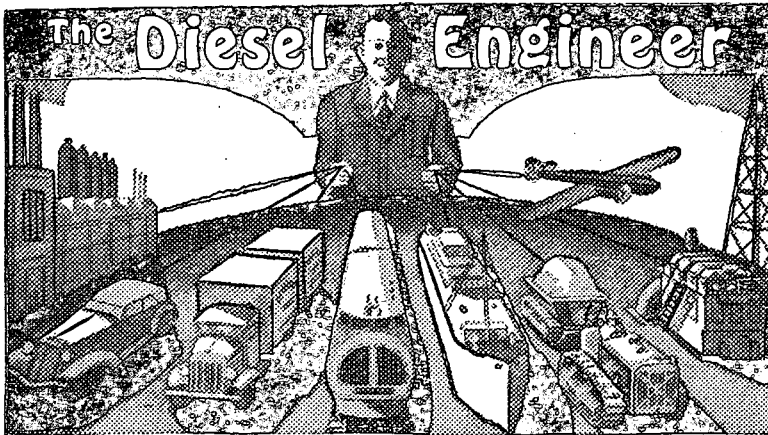
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28x4.60-21	2.10	.95	32x4	2.65	.85	30x5	3.30	1.35
28x4.75-19	2.15	.95	32x4	2.65	.85	32x5	3.40	1.45
28x4.75-20	2.20	.95	32x4	2.65	.85	32x5	3.55	1.55
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30x5.25-20	2.60	1.15	32x5	4.95	2.75	38x8	10.65	3.95
31x5.25-21	2.95	1.15	32x5	7.25	3.95	40x8	12.65	4.15
28x5.50-18	2.95	1.15	36x8	9.00	3.95	40x8	12.65	4.15
28x5.50-19	2.95	1.15						
28x5.50-20	3.10	1.15						
30x6.00-18	3.10	1.15	6.00-20	\$3.25	\$1.65	7.50-20	\$5.40	3.75
31x6.00-19	3.10	1.15	6.50-20	3.60	1.95	8.25-20	7.60	4.95
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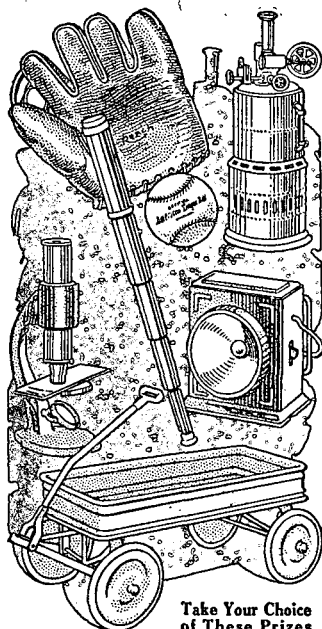
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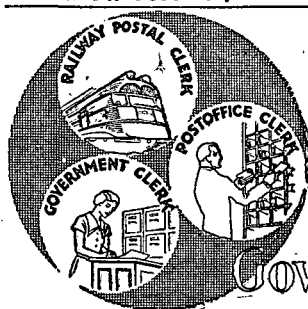
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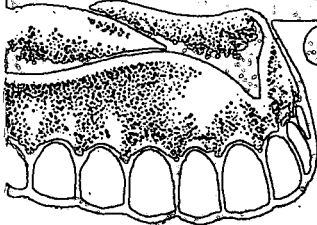
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T. O'CONOR SLOANE, Ph.D., *Editor*

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The Great and the Small

T. O'CONOR SLOANE, Ph.D.

IN the months of autumn a reasonably early riser could have seen the so-called morning star, sometimes in the company of the moon, fairly blazing as it rose in the eastern sky. It was well worth rising at five in the morning to see the beautiful planet. Although it is called the morning star it is a planet of the solar system, with an orbit of less diameter than that of the earth. It might be called the morning planet. It is a sort of celestial pyrotechnics. Notwithstanding its flaming appearance, which it parts with as it rises, it has no light of its own, but like the moon, is seen by the light of the sun light reflected from its cloudy mantle. Its slight distance from the earth is the cause of its brilliance. The distance is always stated in miles, and is determined by triangulation or parallax. It is the planet Venus.

The distances of the planets from the sun are stated in miles. Their dis-

tances from each other vary every instant, owing to their motions in their different orbits. The earth is about ninety-three-million miles from the sun, the distance varying slightly owing to the ellipticity of its orbit.

Suppose astronomers undertook to state the distance of the true stars from our earth in miles. For the nearest star the miles would be equal in number to the seconds in four and a quarter years, multiplied by one hundred and eighty-six thousand. This brings the miles up to the trillions. So to simplify the statement of star distances the light-year is employed, equal to the miles traversed by light in one second multiplied by the seconds in a year. "The star nearest to the earth is the sun, a small fraction of a light-year distant. The next nearest star is four and a quarter light-years, distant, about sixty-three thousand times the distance of our sun from us.

All these are dimensions of a very large order. There are other dimensions that are of a very small order. Light is taken as due to ether waves. We have to pass over the fact that we do not know what the ether is, and there seems to be no probability that we ever will know. As sound is due to air waves, and travels with relative slowness, light travels with enormously greater speed and in that respect alone calls for a more "agile" medium to transmit its waves nearly two hundred thousand miles in a second. The ether is a producer of long waves such as those of radio transmission and of much shorter ones affecting the optic nerve and giving light. Others, still shorter, produce ultra violet rays and many other rays or waves, some of them quite dangerous such as X-rays.

The production of the colors of the rainbow by passing light through a prism, the production of bright rings of colors by placing a convex lens of long radius of curvature on a glass plate, were achievements in scientific investigation. The prism gave the spectrum of what were called the primary colors, an incorrect designation as we know. But the tiny droplets of water in the rainbow had been doing this decomposition of light for ages. After playing for generations with the spectrum colors, as shown in many combinations in the soap-bubble, after the contest of the physicists as to whether light was due to the emanation of minute particles from the body giving light or whether it was due to ether waves, the wave theory won the victory, and next the beautiful colors of the spectrum were made to come down to practical use, when the spectroscope was invented.

It had long been known that common salt would give a strongly colored

flame when mixed with alcohol. The spectroscope was invented. This effected the magnification of the spectrum or made it subject to a measurement of its bands of color. But when it was found that sodium for example always gave yellow bands, always in the same parts of the spectrum, it suggested a means of instantly detecting the presence of any sodium compound in a substance. Other substances could be detected in the same way. This was not all. It was found that the minutest quantities of substances, which were too small to be detected in ordinary analytical processes, could be instantly detected by the new instrument and the world was awakened to a wonderful discovery. The spectroscope, a physical instrument, became an instrument for chemical analysis.

The spectroscope was taken up by the astronomers. It showed the presence in the sun of a number of substances, analyzing something nearly a hundred million of miles away. This was the small working on the large.

The spectrum may be pictured as a ribbon, crossed with what are called the colors of the spectrum, seven in number according to what may be termed popular conception, and, like much else of such material, totally wrong. This popular idea is however a great convenience as, like many imperfect enunciations, it does service in letting us carry in our minds where to look for the longer and where for the shorter waves. To carry the spectrum in this sense in the mind there is a sort of word that tells it. It is "vibgyor," the initials of the color names, violet, indigo, blue, green, yellow, orange, red. The short waves are in the violet end, the long waves in the red end.

Observers started to look at the spectrum of the sun, and the obser-

vation was made that the spectrum in addition to the rainbow colors was crossed by lines or bands. These bands corresponded in position with the characteristic bands of the known elements. The presence of elements can be detected by these bands, for they correspond exactly in relative position with the luminous bands of the various elements. They were observed in the spectrum of the sun and identified a number of the constituents of our luminary, and even showed the presence of unknown elements. The discovery of helium was made in the sun by spectroscopy, and the name is derived from the Greek word meaning sun, helios.

After man had gone in his observations some ninety three millions of miles away from the earth and discovered helium in our great luminary, it did not occur to him that we would eventually use helium to inflate balloons.

If a locomotive with its whistle sounding, approaches us and passes us, whistling all the time, a difference in the pitch of the sound can be observed if the speed of the engine is great enough, and the difference in pitch is always there, even if too slight for recognition. This is clear enough. The approaching engine shortens the sound waves and as it recedes from the observer they are lengthened. This refers to their effect upon him. The corresponding thing occurs with light. A star approaching the earth with what may be called astral or star velocity, will have the ether waves it emits shortened or raised in pitch. If it recedes they will be lengthened. It is the action with ether corresponding to the change in pitch of the locomotive engine. Assume it to be approaching the earth. The ether waves producing the violet rays would

be increased in pitch so as to disappear, and the indigo rays would be shortened and would appear violet. At the other end of the spectrum the red would move up into the orange territory and the infra-red would take its place. If the star were moving away from us the action would be the reverse. The entire spectrum would always be there, but with its colors moved one way or the other according to its motion.

Suppose that the spectrum of the sun and the spectrum of a star moving towards us were compared, it would be found that the whole spectrum of the star would be moved towards the violet end of the solar spectrum. If the star were moving away from us the reverse displacement of the star's spectrum would be produced. The spectroscope has enabled observers to detect and measure the motion of a star in the line of sight, towards or away from the earth. The Doppler law was at the basis of this celestial measurement, but to carry it out and get mensurable results astronomers had to wait for the spectroscope to be at their command.

Christian Johann Doppler was born in 1803 and died in 1853. The spectroscope came six years after his death. Yet railroad trains were running in his time quite fast enough for the Doppler law to have been observed. It was too bad that he could not have waited for the spectroscope.

The motion of the star directly toward the observer produces the observed displacement of the spectral band, but, as their relative positions are unchanged, the elements can be identified. Their displacement is measured. It is greater or less as the velocity of motion of the star is greater or less. It follows that the velocity of the star towards or away from the

earth can be calculated from such an observation. In this achievement the astronomers have given us one of the miracles of modern science. And this miracle is based on the theory of the existence of the luminiferous ether, whose vibrations are assumed to produce light, whose impinging on a surface so as to illuminate it produces pressure, and which tells us the rate at which a star travels towards or away from the earth. And no one knows what the ether is. There are of course theories about it, but unproved theories tell us little or nothing.

When it was generally known that the spectroscope could detect an almost infinitely minute trace of an element in a mixture, it was recognized as one of the wonders of the world of science. But what must we think of the determination of the velocity of a star if it is moving towards or away from us?

It is here that we come to the greatest disparity. The ether waves which produce light are extremely short. Those used in radio transmission are far longer, and can be stated in terms of feet or centimeters. They carry the spoken message indirectly, to be converted into sound by the receiver. When thus received the silent ether waves are used to produce air waves of the rates which affect the human ear. The range of these waves or vibrations from the standpoint of audibility varies with different persons, so that it is a personal range, for some people can hear notes so high or so low that they are only imperfectly received by others. It is different in the case of ether light waves. Our

vision is restricted to the range of waves in the spectrum; we can see by no others, and there is a vast range above and below the spectrum colors. These do not affect the optic nerve, as far as seeing is concerned. The ether waves in this almost minute part of the spectrum are all that can make us see. And it is these which we use to measure the speed with which some great star is approaching or receding from the earth. To study the motions of a giant star, many light years distant from our inconspicuous little earth, the astronomer uses angstroms.

A millimeter is about one-twenty-fifth of an inch. An angstrom is one ten millionth of a millimeter.

It is certainly going from the big to the little to investigate a star, remote in space, many times the size of our earth, to find out what elements are in it, and to determine whether it is moving directly away or towards us, or if part of its motion may be one of these, and to do it by examining a little spectrum produced by minute light waves coming over an inconceivable distance through space to our insignificant, little globe.

The measurement of the motion of a star towards or away from us brings up the association of large and small units in immediate neighborhood of one another. The distance of a star is stated in units, called as we have seen the light year. It is about sixty three times the distance of the sun from the earth, a little in excess of that length or about six trillions of miles. The angstrom and the light-year are the largest and smallest units of linear measurement.

Intelligence Undying

By EDMOND HAMILTON

In this story, we read about a succession of generations, extending through the centuries. It presents a most impressive picture for the future of our world, as the generations carry the message of extraordinary and increasing intelligence down through the ages.

THE young chemistry instructor, chatting with two fellow-teachers in one of the halls of Midwestern University, had no notion that his next words were to change all human history to come.

It was in the most casual of conversations that he spoke, nodding toward the stooped, elderly, gray-haired man who had just limped past them in the hall.

"Doctor Hanley looks pretty feeble lately. I expect his work is about done—too bad, too."

Then he added with more liveliness, "Say, did I tell you how I made out in the poker game last night?"

That young man never dreamed what he had done. He never even knew that Doctor John Hanley had heard him.

Nor did anyone else know until on a night some weeks later, young Edwin Snow visited the elderly scientist.

There was a curious friendship between the old and the younger man, between the world-renowned biophysicist who was supposed to think only of his work, and the quiet, modest young instructor in English literature.

Everyone else at Midwestern was awed by Doctor Hanley's great reputation. His infrequent lectures were listened to with bated breath by students striving to understand. Even the President of the University ap-

proached him with the deference due to a superior.

But young Snow had come to Midwestern and had seen what the others had failed to see, that in spite of all his eminence Doctor Hanley was a lonely old man. So he had disregarded the scientist's fame, which indeed Snow's unscientific mind could not appreciate, and had made overtures of simple friendship. In a few months he was Hanley's closest, almost his only friend.

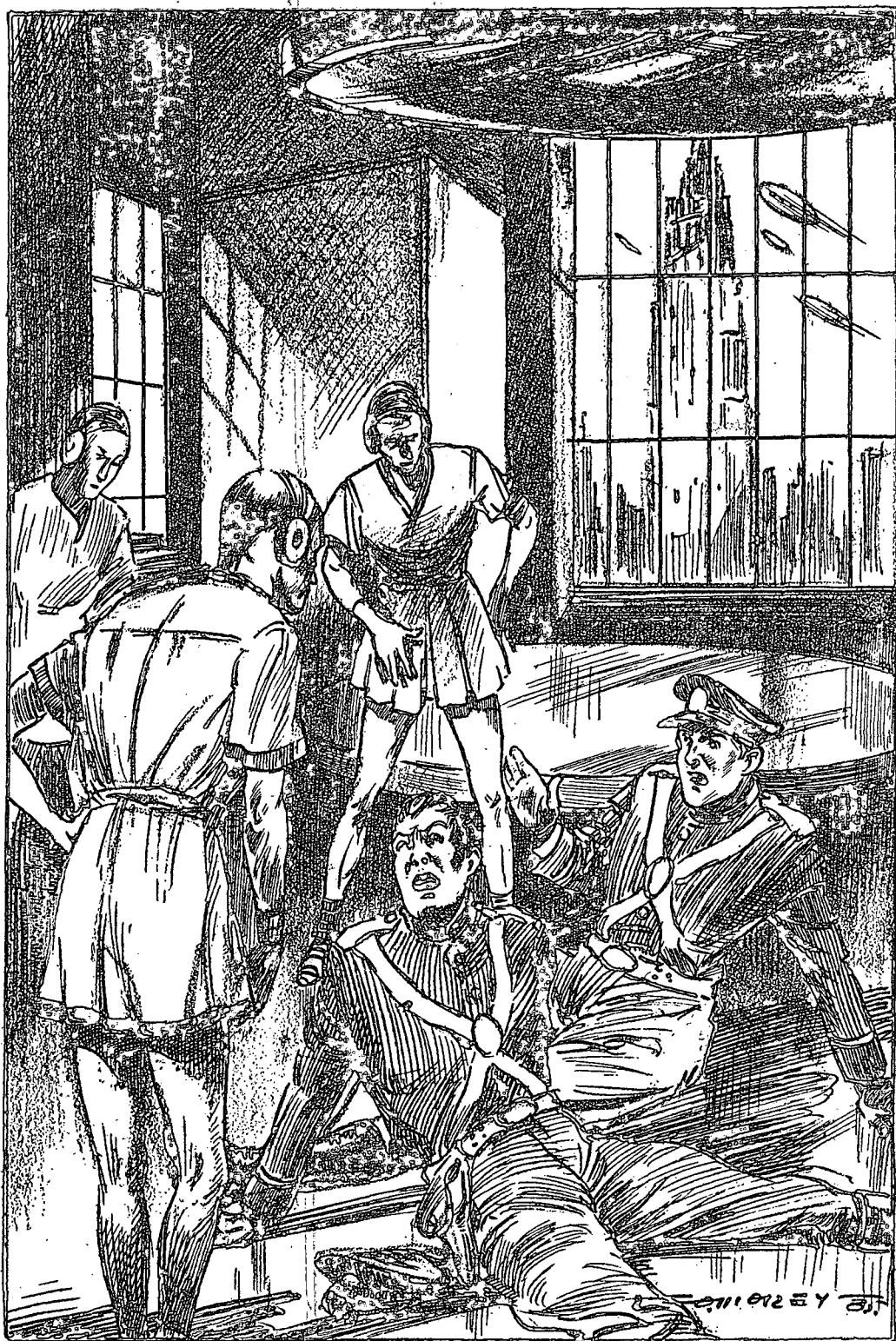
At least two nights a week the gray-haired, impatient-faced and acid old scientist and the spectacled, smiling, easy-going young instructor sat in Hanley's house, and smoked and talked till midnight. But on this night Doctor Hanley was different. He stared for a while at the younger man from under his gray brows, and then spoke abruptly.

"Snow, you know I've been busy lately on private research. To-night I'm going to tell you what I've been doing."

The young English teacher took his pipe from his mouth. "If you like. The chances are I won't understand you anyway."

"I'll make you understand, all right," the scientist said a little grimly.

He hesitated a moment, then spoke more slowly. "Snow, a few weeks ago



"What . . . what have you done?" gasped the captain, ceasing his vain efforts to rise.

I heard someone, a young fool over there at the University, say something about me that brought me up short.

"It suddenly made me realize what I never realized before. It made me realize that my life, my work, are practically finished."

Snow looked at him with more attention. "I wouldn't let a few chance-heard words upset me if I—" he started to say.

Doctor Hanley interrupted forcefully. "I tell you, it's true. I never realized it before, I couldn't realize that life could be so short, but it's so."

"I'm almost seventy now. The physicians I went to told me that my heart may pop out any time, that I have only months at best. It's all over, my life, my work, the work I planned to do in the future, all over, finished."

He stared broodingly into the fire, his hard eyes dreaming.

"That a human life can be so short! Why, it seems only yesterday that I was your age, starting to work. Just yesterday!"

"The things I've planned to do, the problems I've always meant to solve, the secrets I've meant to discover!"

He made a harsh movement with his hand. "And now it will never be done. It's taken all my life really to learn the fundamentals of my science, to get the tools and skill to do great things, and now when I'm ready at last to do them, this miserable body of mine fails me and it's all lost."

Edwin Snow nodded, his eyes deeply sympathetic behind his glasses. "It has always seemed hard to me that we should have to die just when we have at last learned to live," he said.

"I'm not thinking of myself, not of any individual," Doctor Hanley declared. "It's man, the race, I'm thinking of."

"Snow, have you ever stopped to think what progress might be if we did not all have to spend half or more of our lives learning what the world already knows?"

"Suppose a child were born into the world knowing all that I now know? That child would not have to spend years learning things already known, but could go on from present knowledge, could spend all his life contributing to new knowledge."

"Think of the discoveries he could make, the problems he could solve! He could go deeper into the mysteries that confront us than any man has ever been able to do."

Young Snow's whimsical, pleasant face wrinkled in thought. "It's certainly an attractive fancy," he said.

Doctor Hanley was silent for a few moments, eyeing the younger man strangely.

THEN he said, "It's no fancy, Snow. I'm going to do it."

"What?" The young instructor was startled out of his usual easy-going calm. "Going to do what?"

"I'm going to transmit my intelligence, my memory, my mind, to a newborn child's brain," the scientist answered.

Edwin Snow looked so earnestly at him that despite his seriousness, Doctor Hanley smiled bleakly.

"No, my wits aren't turned. I'm really going to do the thing. I've been working on it these last weeks, ever since I realized that my life was almost over."

"I said to myself, 'If I could just transfer my mind, my knowledge, to a newborn child, he could go ahead and do all the things I won't live to do, without having to waste time learning.' And I've found a way to transfer my mind like that."

"But how—what—," the now thoroughly amazed Snow began to stammer when a wave of Hanley's hand cut him short.

"It's simple enough at bottom, though it has entailed the devising of wholly new principles of apparatus."

He leaned forward. "When we come into this world, Snow, our minds are a blank sheet except for certain reflexes which we all inherit. But from our birth onward, our minds are affected by all about us, our reflexes are conditioned, as the behaviorists say. All we experience is printed on the sheet of our minds.

"I will try to explain to you how this is done. The seat of the human intelligence is in the cortex or outer layer of the cerebrum, which is the upper and bigger part of the brain. The cortex consists of a vast number of gray nerve-cells or neurones, some concerned with sight sensations, some with taste sensations, and so on.

"When someone gives you a strange fruit and you first look at it, the sensation passes from your eye retinas up the optic nerves to the group of sensory cells in the cortex that receive visual impressions. Then when you bite the fruit a sensation of pleasant taste is transmitted to the taste-cells of the cortex, and between sight-cells and taste-cells a certain individual connection is formed.

"Because of that connection, the next time you look at such a fruit the stimulation of your sight-cells will continue along that previously formed connection and will stimulate the sensation of pleasant taste in the brain's taste-cells. In other words, merely looking at the fruit this time will cause your brain to feel a sensation, an associated memory, of pleasant taste. For the first experience estab-

lished a definite physical connection between certain of your visual and taste neurones, and that is what you mean by saying that you *learned* that the fruit tastes good.

"In the same way that you learn to *know* things like that, you learn to *do* things. The first time you perform some action requiring skill, it is hard to do, because the connections between the brain's neurones which receive sensations and thus see what to do, and those which issue commands to the muscles to do them, are not well formed. But each time you perform that action the connections between the sensory neurones and motor centers are better formed, and so you soon perform the action without conscious thought, so well are the connections formed.

"Everything a human being learns, therefore, simply establishes new connections between the nerve-cells of the brain. There are millions of nerve-cells in the cortex of the cerebrum and therefore you will see that the different connections and combinations between them are infinite in number. No two people ever have exactly the same combinations of connections between their neurones, which is to say that no two people ever have exactly the same mind, memories, and knowledge.

"As I said, a newborn child has no such knowledge-connections in his cortex at all—he has not yet formed any. Now if I take that child immediately after birth and establish in his brain exactly the same web of intricate neurone-connections I have built up in my own brain, he will have exactly the same mind, memories, knowledge, as I have. He will remember everything that has happened to me, everything I have ever learned, have ever done. He will not be I, yet

his mind will be exactly identical with my mind!"

Edwin Snow's pipe had dropped from his hand and the young instructor was staring at the scientist with protruding eyes.

"Do you mean that you can do that?"

Doctor Hanley nodded. "I can. I've devised a way to *scan* my brain's intricate web of neurone connections by electrical impulses, and by means of those impulses to build up an exactly identical web of neurone connections in the infant's brain. Just as a television scanning-disk can break down a complicated picture into impulses that reproduce the picture elsewhere."

Snow got to his feet, staring at the old scientist in an ill-concealed species of horror.

"But what child—"

"That's all arranged," waved Hanley. "Plenty of infants are born in this city each year whose mothers don't want them.

"I've arranged for such an infant to be given to me as soon as born, a white male child. I will adopt the child legally and as soon as it is here I will transfer my mind to it.

"You understand, this experiment means death for me, physically. The shock of those searching electrical impulses in my brain will without doubt kill me, in my present feeble condition.

"But the counter-impulses, that build up my neurone-connections in the child's brain, will not harm him. And his mind will at once be the same as mine. Even before he can walk or talk he will have all the knowledge and memories that I've amassed."

"There's something unholy about it!" burst from Snow. "To put one of the greatest scientific minds in the

world, with a lifetime of experience behind it, into a newborn child!"

"Man, can't you see what it will mean to the world!" exclaimed the scientist passionately. "Can't you see what John Hanley 2nd, will be able to give to the world? He won't have to waste time learning but will go on from where I'm leaving off.

"And not only he, but others beyond him. When his life nears its end he can pass on his mind, *my* mind, to another child, to John Hanley, 3rd. And that infant will become possessor of all the mental power built up in two lifetimes.

"Why, it can go on and on, my mind passing down from generation to generation, growing and growing, giving to the world gifts of power of which it does not now dream. An undying intelligence that grows ever greater!"

His eyes flamed with the vision. Then the flame passed and almost complacently he spoke to the dazed young man.

"You're to have part in this too, Snow. I'm naming you as guardian of John Hanley 2nd, in my will, to care for him, for *me*, after this body of mine is dead."

Edwin Snow shook his head, that horror still strong in his eyes.

"I'm not sure that I want anything to do with the thing at all, Hanley."

YET two weeks later Snow was in the scientist's private laboratory, when Hanley, wire-taut with excitement, prepared to effect the incredible transfer of his mentality to the newborn baby an ambulance had just brought to the house.

On a prepared table Hanley placed the scrawny, squalling red baby. Beside it was another table, and at the head of the two tables was a metal stand bearing a squat, enigmatical

bulk of apparatus. Tentacles and cables joined it to other mechanisms in the room, pulsing tubes in it glowed violet through slits in its metal cover. From it led two insulated wires that each ended in a metal cap, one of them twice as large as the other.

Rapidly, gently, Hanley placed the smaller metal can upon the head of the now dozing infant. Without speaking he laid a pencil and pad beside the child, then climbed upon the other table and adjusted the larger, metal helmet on his own head.

He reached for the controlling switch. "Remember, Snow," he warned, "you are not to touch the apparatus no matter what happens. It is set to turn itself off automatically at the proper time."

Snow swallowed, nodded, unable to speak. Hanley suddenly smiled at him. "Goodbye, Snow. Or should I say—*au revoir*?"

He threw the switch. The mechanism on the stand hummed loud, and instantly Hanley sank back, his eyes closing.

The child too lay in stupor, breathing slowly. Edwin Snow watched them, conscious that he was trembling.

The incredible apparatus hummed on. Minutes passed, that seemed eternities to the watching teacher. Then a red light winked somewhere inside the apparatus and its humming abruptly died.

Edwin Snow bent hastily over Doctor Hanley, examined him with trembling hands. Even to his untrained eyes, but a moment was needed to show that the scientist was dead, his gray face set and cold.

Young Snow turned toward the infant. And as he did so, the child opened its eyes.

It looked up at him, steadily, and at the gaze of those strangely steady,

brown eyes, Edwin Snow shuddered.

The child had such an expression in its eyes as he had never before seen in an infant's. Slowly, steadily, it turned its little head until it could look at Doctor Hanley's dead form.

Then its tiny hand moved uncertainly until it reached the pad and pencil beside it. With the preternaturally strong hand-grasp of a newborn child, it clutched the pencil in its fingers.

The little hand moved awkwardly, the pencil scratched slowly, unsteadily, over the surface of the pad. Then it released the pencil. Mechanically Edwin Snow picked up the pad, and as he read the crudely scrawled, almost indecipherable letters, he uttered a shuddering sob.

"I-T W-O-R-K-E-D, S-N-O-W. E-V-E-R-Y-T-H-I-N-G'S A-L-L R-I-G-H-T A-N-D M-Y M-I-N-D I-S J-U-S-T T-H-E S-A-M-E."

JOHN HANLEY— John Hanley, 21st—stood in taut attention beside a beryllium table upon which two beams of concentrated electrical force played upon a tiny speck of bismuth.

In body, John Hanley, 21st, was a thin, bald man of middle age, with a severe mask of a face. But the blue eyes in that face were astoundingly in contrast to the rest of it, impatient, keen, penetrating eyes, fixed with sword-like intensity on the bismuth speck.

Suddenly the silence of the silvery-walled, sunlit laboratory was broken as a door opened.

A young man entered, one clad like Hanley in a short white tunic and sandals. His dark, mobile young face was excited.

John Hanley turned in amazed indignation. "You, Kriss? You dare to enter without summons?"

The young man's features expressed utmost respect struggling with uncontrollable excitement.

"Your pardon, master, I know I break the rules. But something has happened."

"Well, what is it?" Hanley demanded impatiently. "What's gone wrong now?"

Kriss pointed toward the silvery west wall of the laboratory. "Master, rocket-ships are fighting up there in the sky, many of them! They look like Northern and Southern battleships."

The scientist's blue eyes were incredulous. "Ships fighting—war—in this year 3144?" he exclaimed. "Impossible! There has been no war between the two great Federations for twelve centuries."

"Yet they are fighting now," Kriss persisted. "You can see from the balcony."

The scientist hesitated, glancing at the experiment on the table. "To leave now when I'm on the very verge of at last releasing atomic power—but yes, I must learn what is happening."

He reached abruptly and moved levers, and the twin electrical beams died. Then he strode toward the door.

He went, the obsequious, excited Kriss following closely, through splendid, silvery halls and connecting laboratories deserted now of their occupants. He emerged through a door into sunlight and thin air of biting chill.

It was a small balcony, on which were a score of young men clad like himself and his follower. The balcony jutted from the edge of an oblong, flat-topped structure of silvery metal, which housed the laboratories of the world's greatest scientist.

This silvery parallelopipedon was perched sheer on the edge of a great cliff and looked out over scores of

soaring, snow-crowned mountain peaks and vertical, black chasms. John Hanley, 21st, had established his laboratories here in the great peaks of the North American Rockies where he would be far from the interferences and annoyances of the teeming cities that benefited by his discoveries.

John Hanley strode through his respectful young servants on the balcony and stared with them into the western sky.

There above the distant peaks hovered a boiling ball of whirling black specks that shot tiny jets of white fire at each other.

John Hanley snapped an order and swiftly a stubby-looking telescope was brought, through which he peered at that distant aerial conflict.

He turned from the instrument in a moment, his expression one of shaken incredulity.

"Northern and Southern ships fighting there, yes! This means that war has broken out somehow between the Northern and Southern Federations."

His face flushed angry red. "The fools, the blind fools! After I've worked a thousand years and more to give them greater and greater powers, and they use them—"

He broke off, turned toward the uncomprehending, listening young men.

"You who are my servants, is your allegiance now to me or to the Federations from which you came?" he asked them.

Kriss answered for them all. "To you, of course, master! Did we not all swear to execute all your commands, to become the hands and limbs by which you could carry out your work?"

"Very well!" Hanley approved. "Quick, then, there is work for you to

do before any of those ships get here. Yes, some of them will be here, which ever manage to destroy the others."

His rapid orders sent the young men running into the laboratories. Quickly they began assembling a strange and bulky mechanism.

They knew not what it was they were building, had no slightest comprehension of what lay behind their master's orders. It was enough for them that he so ordered. His was the brain and they were but extensions of his limbs.

THIRTY minutes later the work was finished and John Hanley, 21st, stood with his servants on the balcony and watched the two surviving rocket-ships approach. He and the young men now wore curious circular shields of metal over their ears.

The two fish-like battleships came on fast with thudding rocket-blasts, and the crossed arrow of the Northern Federation could be discerned on their prows. They were the victors and the only survivors of the fight. They landed on the roof of the silvery building and down upon the balcony came a little troop of men from them.

These men wore blue harnesses over their tunics and flame-tubes at their belts, and their faces still flamed with light of battle. But their leader bowed with deep respect as he faced the chill, immobile figure of the scientist.

"Sir we are of the Rocket Fleet of the Northern Federation and have been sent to protect you," he said rapidly. "War has been declared between the two Federations."

"We met a Southern force bound here, no doubt to abduct you, and, in destroying them, all of us but two ships were also destroyed."

"What are your orders regarding me?" John Hanley, 21st, asked coldly.

The Northern captain's eyes flickered but he did not lose his attitude of deep respect.

"We are to take you for your own protection to the Capitol, sir. There you will be housed in safety and comfort befitting the world's greatest scientist."

"Safety and comfort," repeated John Hanley bitterly. "What you mean is that you're taking me so that I will invent weapons for you to destroy the Southern Federation with, weapons that will depopulate half of the earth."

"And the Southern Federation had the same idea and sent ships here to get me, only they didn't send quite as many as your headquarters did."

"I thought that after all the great gifts that I and my predecessors, twenty other John Hanley's, made to the world, the comforts and powers we gave it, it would have forgotten this ancient madness of war as I had forgotten it."

"I see now that I was wrong. You've taken all the things I gave you, and all the time you've kept plotting to murder each other. And to make me part of that wholesale murder!"

The captain, looking a little doubtful of his own temerity, stepped forward and laid his hand on the scientist's shoulder.

"I am sorry, sir—but my orders—we must go now—"

Without moving from where he stood, John Hanley, 21st, pressed the switch at the end of a cord running along the balcony rail.

Instantly the Northern captain and his followers swayed and staggered, pitched wildly into each other, losing their balance and falling on the silvery floor of the balcony.

They cried out as they fell and one got his flame-tube out and loosed a

random burst of white fire that angled sharply up and struck John Hanley's side. The scientist pressed his hand to the scorched spot on his side, and meanwhile his young servants, like himself unaffected by this staggering madness, leaped forward and disarmed the soldiers.

John Hanley 21st looked down at the fallen men, who were struggling vainly to get to their feet. Each time they raised themselves a little they overbalanced and fell again.

The scientist said icily to them, "You begin to comprehend that I, who have given you almost all the powers you possess, have powers still of which you know nothing."

"What—what have you done?" gasped the captain, ceasing his vain efforts to rise.

"Something that you could hardly understand even when I tell you, you who are content with the rest of the world to receive all *your* scientific discoveries from my brain," said Hanley.

"In there in the laboratories is a machine that broadcasts sounds, sonic waves inaudible to your ears or any human ears because their wavelengths lie outside the range of human audibility. And those sonic waves violently disturb the semi-circular canals in your inner ears.

"You do not know, you who think only of killing, that inside the human ear lie three little semi-circular tubes or canals containing liquid, and that by the position of that liquid in the canals the body can tell when it stands erect and when it leans, and so is able to balance itself enough to walk and stand and sit.

"The sonic waves I am broadcasting disturb the liquid in those canals and so you cannot stand or walk. And these continuous waves of mine are passing around the whole globe, and

nowhere on earth now can men, except those with me here, stand, not any more than you can."

He uttered a word and one of the servants hurried out with a television screen. John Hanley 21st touched its pointers and scene after scene appeared rapidly in the screen.

Cities appeared in it, great metropolises of bedlam in which the streets were choked with stumbling, crawling people, none of whom could stand erect.

Mighty rocket ships were seen driving aimlessly through the sky, their officers unable to stand up to their controls.

The world had suddenly lost man's first and greatest achievement, the ability to stand erect.

John Hanley 21st spoke into the instrument, his voice strangely level and emotionless.

"Peoples of the Northern and Southern Federations, men and women of earth, it is I, John Hanley 21st, who have loosed this staggering terror on you.

"For long I have given you power and now you would use that power to make war on and destroy each other. I see now that not only must I drag you upward in material progress but that I also must rule you.

"Therefore I now assume rule over you and I will appoint those who are to execute my commands. My will shall be law from now on, and nations are no more. Leaders of the Federations, do you agree?"

From the instrument came the gasping, confused answers of dozens of voices, terror-filled. "We hear! We agree!"

"Then obey my first command, which is to cease immediately all war and preparations for war."

"My second edict is that in case of

AMAZING STORIES

my death he whom I shall designate as my heir, as John Hanley 22nd, shall be obeyed by you all, as I am."

He snapped off the instrument and then touched the switch at the rail. From the instrument came a world's choked cries of relief.

JOHAN HANLEY, faced the dazed, unsteady captain and his men, who had risen to their feet.

"Your ship is fast," he said. "Go instantly to the nearest city and bring back a newborn male child. Hurry!"

As the rocket-ship roared away, the scientist's servants sprang to his side. "You are wounded, sir!" they cried. "Never fear, I will live until that ship returns with a child," John Hanley told them inflexibly. "Help me inside."

They assisted him into his own innermost laboratory and there, at his command, they laid him upon one of two tables, placing beside them a squat, bulky apparatus which he ordered brought from a cabinet.

He lay there silently until the drumming blasts of a rocket-ship came to their ears from outside. A few moments later the Northern captain entered hurriedly, a carefully wrapped burden in his arms.

"The child, sir. It is a new born one we got from the nearest State Nursery."

"Put it on this other table," John Hanley, 21st, directed.

Then he raised himself a little. "I name this child John Hanley, 22nd, and my successor. Do you all hear?"

"Very well. Now all of you go away."

"But, sir, we cannot leave you now when—" they cried.

John Hanley pointed to the door, and they went.

With feeble hands John Hanley ad-

justed the two metal caps of the apparatus, one on the infant's head and one on his own.

He examined with dulling eyes the connections, saw that all was correct, and then put his hand on the switch.

He smiled at the infant. Another body, another life, for this undying mind of his. The atomic power—he wouldn't complete that in this body, but his mind would do it in this child's body. John Hanley, 22nd, would go on and do it.

He was going to die but his mind, his experience, his knowledge, would not die but would still live on for the world. Still with the smile of his tired face, John Hanley, 21st, closed the switch.

JOHAN HANLEY, 416th—or the Great Jonanli, as he was worshipped by the humans of this year 22,918—sat in his spherical metal observation chamber a thousand miles inside earth's crust.

It was a violet-lit globular chamber, two thousand feet in diameter, crammed with scientific instruments that would have been unintelligible to any other man on earth. It lay here at the bottom of a shaft bored down through the soil and rock and magma of the planet.

In it John Hanley, 416th, had been for many months investigating the interior stresses of the earth. He needed no sleep or food, only the necessary fatigue anti-toxins and nutrition injections which he had devised for himself.

Bodily, he was extremely small and slight, not much over four feet in height, his limbs smoothly rounded, his face almost effeminate in its prettiness. Only the spark in his pale blue eyes showed the vast force of the mind that dwelt in this slight body.

John Hanley rose from the bank of cryptic dials and quivering needles, which he had been examining for many hours.

He stretched a little, and looked at a chronometer on the wall.

"Eight months," he muttered. "Better see if all's going well up there."

Passing contempt showed itself on his face. "They'd never know or care if anything did go wrong, the way they leave everything to be done by the Great God Jonanli."

He turned toward the screens and dials that connected this subterranean observation chamber with his many other observation chambers on earth's surface.

Rapidly as John Hanley touched switches, he was connected visually, auditorily and tactually to those other chambers.

Some of them gave him views of great, sunlit garden-cities. In these beautiful park-like scenes many throngs of women and men, small of body and graceful and pretty as himself, were wandering, laughing, playing games.

John Hanley eyed them for but a moment before switching to other stations. These gave views of large factories and workshops, built in uninhabited regions remote from the garden-cities.

Huge, automatic machines worked in them in an ordered wilderness of complex metal, turning forth all the necessities of life and transporting them, without need of any directing human hand.

From other stations colossal electrical mechanisms could be seen controlling the weather, keeping temperature, precipitation and humidity at unvarying constants without any human supervision.

Still other stations gave him view

of underground and undersea mines, all machine-operated. Everywhere were automatic recorders that told him at a glance the progress of the last months.

Satisfied, John Hanley switched to screens in his laboratories on the surface, all enclosed in a colossal cubical building that was the sacred Temple of Jonanli. There too recorders told him the progress of certain slow processes being tested in his absence. There too all was done by machinery, and none of the graceful humans were visible.

The last shift of scene brought his vision into an astronomical observatory where a great battery of flat, disk-like electro-cinema telescopes peered unceasingly at the heavens, slowly moving on their mounts. He examined the visual and spectroscopic records of these.

Suddenly, down there in the sphere a thousand miles under earth's surface, John Hanley started violently. He quickly shifted a control and ran through a section of the astronomical record again.

Then he cut off the instrument and stood for a brief time plunged in thought. Quickly the spell broke and he entered a short, torpedo-like projectile attached to the top of the sphere. He closed its doors, atomic power hissed from it, and it flashed up the vertical tunnel toward the surface of earth at great speed.

At the surface, he emerged directly into the Temple of Jonanli and went at once to the astronomical observatory. He turned certain cumbersome instruments toward the sun.

Two hours later the view-screens in the garden-cities all over the world rang out a certain signal. It was the sacred call of Jonanli and quickly,

hurriedly, the people of earth flocked to the nearest screens.

They bowed themselves in deep reverence as the face of Jonanli himself appeared in the screen.

"My people," John Hanley addressed them from his observatory, "a great peril has come upon us.

"Our sun, which you, who know nothing of science, no doubt consider unchanging and eternal, is only a star like any other star. And it is about to undergo a change that in time occurs to all stars.

"Every star gets the energy it radiates by the breakdown of electrons in its own atomic structure. This continues until the atoms of the star have been so stripped of their planetary electrons that they can be packed together in exceedingly smaller space than before.

"When this condition reaches a certain stage, the instability of the star is so great that it collapses suddenly into a white sun only a fraction as large as the original sun. It becomes what was once called a "white dwarf" and thereafter gives off only a tiny fraction of the heat and light it formerly radiated.

"I have just discovered that our sun is about to become a 'white dwarf.' In a short time this thing is going to happen to our own sun, and thereafter our earth will receive so little heat and light that it will become a frozen planet on which nothing can live."

There was stunned silence and then from the view-screens came back to him a tremendous, wailing outcry of terror.

"Save us, Jonanli! Save us from this death that comes upon us!"

"I will try to save you," John Hanley told them impatiently. "But you too must help. You must act like men.

"Panic will do you no good. There is but one course open for the race, to move to Mercury which is so close to the sun that it, alone of the planets, will be inhabitable and warm after the sun's collapse.

"It will first be necessary to prepare Mercury for human habitation, and then to move all of you there. There is small time to do this, but, if all help, it can be done. For the first time, Jonanli asks your help. Will you try to aid in saving yourselves?"

The only answers were cries of increased terror. "Have mercy on us, great Jonanli! Do not loose this death upon us!

"We have been wicked, we have not sufficiently worshipped you! But do not destroy us now."

"But I tell you you won't be destroyed if you'll work like men to save yourselves!" John Hanley cried.

"Be, merciful, Jonanli," was their reply. "All things are in your hands—we pray you to let us live."

With an exclamation of anger John Hanley snapped off the instrument.

"Children!" he exclaimed to himself. "All the things I've done for them through the thousands of years, the tasks I've lifted from them, it's all made them weak children, solely dependent on my mind.

"And I thought that my mind, living forever and towering above theirs in knowledge, would let me make a super-race, where now it's made one of children who know no longer how to fight and do for themselves.

"Well, it's not too late to undo my error. Not if I can manage to save them from this thing—"

From the great temple of Jonanli, John Hanley reached and single-handedly altered the processes and rhythms of earth's production.

The machines in the great work-

shops began to turn forth other machines, hordes of robots. They were unhuman in shape, but capable of greater variety of tasks than the more specialized mechanisms.

John Hanley concentrated a great host of these robots on building and equipping a fleet of space ships. When this was done, the robot-manned ships sailed at once for Mercury at his command, to prepare that scorched little planet for coming human occupancy.

The robots left behind began construction of a still greater fleet of space ships of enormous size. The humans of earth helped in none of this but lay supine in terror, crying out constantly to Jonanli and staring in terror at the sun.

The sun was changing ominously, its light taking on a bluish tinge and then a violet. Its instability was increasing and the collapse would not long be delayed.

MEANWHILE the robot-manned space-ships had reached Mercury. Across space John Hanley directed the robots in the tremendous task of preparing the planet. The first essential was to give the little planet a rotatory motion, since it had always turned the same face sunward.

This was done by pushing at the equator of the little world with immense beams of force, using the sun itself as a base and brace. Gradually Mercury began to spin and its rotatory motion steadily accelerated under the steady push.

Then came the task of giving the planet an atmosphere and hydrosphere. John Hanley's robots accomplished this under his orders by conducting chemical transmutation of elements on a colossal scale. Vast quantities of the rock substance of the planet were converted, atom for atom,

into oxygen, nitrogen and hydrogen that were combined into air and water vapor that formed a gaseous envelope for the little planet.

John Hanley's plans had seen to it that the molecules of this artificial atmosphere had a velocity far less than the 1500 feet a second velocity of the molecules in earth's atmosphere. Thus Mercury, which, with its low surface gravity, would otherwise have been unable to hold the rapidly darting particles of an atmosphere, could retain this one.

The last work of the robots on Mercury was to erect cities for the housing of the people of earth, and to start into growth the plant-life that would assure a constant supply of oxygen to the new atmosphere. Then they returned to earth.

The aspect of the sun was now terrifying. Great changes could be seen with the naked eye on its surface and the air seemed full of electrical force, the whole solar system breathless. John Hanley ordered the embarkation of the people of earth in the great space fleet that had been prepared to transport them to Mercury.

Terrified as they were at the prospect, the people entered the ships at Jonanli's order. As they entered, robots detailed for the purpose administered to them certain drugs designed to prepare them bodily for the lesser gravitation of the new world.

Then the ships sailed. The robots who manned them had orders to transport their human cargo to Mercury, and then the robots were to destroy themselves. John Hanley was taking no chance of the human race being supplanted on the new world by its own creations.

On the earth now were left only John Hanley himself and a host of robots who had not been needed to

man the ships. John Hanley commanded these to destroy themselves, and calmly they did so. He remained, the only being left on earth.

His instruments told him that the end was at hand. From the roof of the mighty Temple of Jonanli, John Hanley watched that end. He saw the surface of the sun change and break as though it were boiling. Then the sun seemed suddenly shrinking.

Its color changed as it shrank, from yellow to pale gold to white. Almost before the eye could comprehend the extent of the change, the yellow, dazzling sun had become a little glowing white disk looking only a few times larger than one of the larger planets.

The sky above John Hanley darkened almost instantly, and a deep dusk fell upon earth. It was a dusk that would never end until earth itself ended. In that heavy twilight the stars became visible in the firmament, even close to the shrunken little sun.

A chill came quickly upon the air, and rapidly it grew colder. The flowers down in the deserted garden-cities curled and withered in the quick frost. A few flakes of snow drifted down through the heavy dusk.

John Hanley sat on, unmoving. He

felt content, now. The peoples of earth would take up life on that new world, without him. They would cry out for Jonanli's help for a time, but soon under the pressure of circumstance they would learn once more to do for themselves, would become again a strong and self-reliant race.

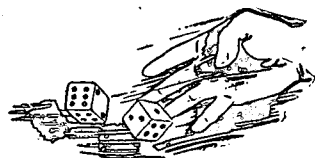
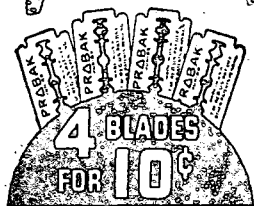
He had been wrong in living as a single super-mind down through the ages. He saw that now, and now he was undoing that wrong. And he felt content now to bring an end to the life of his mind, to let the one undying intelligence in the world die at last.

His memory went back through the hundreds of bodies his mind had inhabited, through the changing centuries and millenniums even to that first John Hanley who had conceived the great plan. Strange, how he and his memories were still clearest in his mind.

The snow was falling heavily, now, and icy frost was covering the world as the cold increased. He did not feel the cold, he supposed because he was too numb. The snow fell, and the frost fell, and the frost crept, and soon even the atmosphere was freezing and falling in great flakes. Only a small white mound on the great roof showed where sat the god of a world.

THE END

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PROBAK JUNIOR

A Modern Comedy of Science

By ISAAC R. NATHANSON

The puzzling fourth dimension is no easy topic to deal with. Let the reader try to draw a four-dimensional object—it is not safe to say a four-dimensional solid. There is true difficulty in picturing it to our mental perception, but who can picture what is going on in the ether, or who can realize that there is such a thing. And is there? This story will bring you into the four-dimensional world, or would do so if you could understand the world of the tesseract.

A MOST unusual announcement appeared in the leading dailies of the city. The amusing comments it afforded, perhaps more than its bizarreness, won for itself a prominent little square on the front pages of the newspapers. All had received an identical typewritten copy from an unknown source, and it read as follows:

NOTICE TO ALL AUTOMOBILE DRIVERS

Reckless driving must stop immediately. Anyone exceeding a speed limit of twenty-five miles per hour within the city limits, crashing red lights, or in any manner or form wilfully breaking the safety traffic rules, shall promptly suffer serious damage to his car.

THE UTOPIAN REFORMER.

The leading paper printed it under the facetious caption: "Drivers: Beware, or the Bogy Man will get you." And another: "Ye Reckless Drivers: Read it and weep."

The local broadcasting station, which had also received a copy of the strange notice, decided to include it in its "Summary of the Day's News." The radio announcer chuckled as he delivered it.

John and Mary Citizen, turning the page, or twisting the radio dial, took the unheard of announcement according to his or her temperament; some with a smile, others with a growl; many thought it very odd. "What some cranks won't think of!" was a common reaction. An insignificant few wondered. In general, however, the odd notice thus broadcasted created considerable amusement, as well as wise-cracking by the perennial wise-crackers. And forthwith the notice was promptly forgotten.

A few days later brought another announcement, more definite in form and content, and which, again on account of its bizarreness, was once more given a prominent space, although headed with a humorous editorial twist. It read:

WARNING TO ALL DRIVERS:

The following will go into effect sharp at noon, Thursday, August the 1st: Anyone who fails to observe the common sense rules of safety, or drives at a speed faster than twenty-five miles anywhere within the city limits, or ignores traffic lights, or is reckless in any way whatsoever with a disregard for



"To the astonished gaze of the mayor, a sheet of paper bearing the mayor's own insignia and resignation neatly typed, appeared out of the empty air."

the life and limb of others, shall promptly suffer a smashed or disabled machine through an unseen agency.

THE UTOPIAN REFORMER.

Again it aroused more or less widespread comment, goodnatured and otherwise, on the part of the reading or listening public. A few timid souls, perhaps as many as you could count on the fingers of one hand, did indeed make a mental note to leave their precious vehicle of transportation inside the sacred precincts of their private garage, until the day announced should have passed safely by. And again, twenty-four hours later, it was all as promptly forgotten by everybody.

On July the 28th, that is, three days before the deadline, came a third and "Final Notice," which this time was given but scant mention in an obscure corner of one or two of the papers, while the rest refused to print it altogether.

"I say," exploded Clyde Hendricks, city editor of the *Daily World*, upon receiving the "Final Notice," "this is getting to be too good of a joke"; and promptly shifted the cigarette in his mouth, and as promptly thumped the crumpled typewritten notice into his already overstuffed waste-basket. "That for you!"

On second thought, Hendricks, with a mock groan and a twinkle in his eye, retrieved the crumpled piece of paper. "Hey, Jake!" to his star reporter. "Call Fitzhugh, will you? Got an assignment for him—the Utopian Reporter."

Jake looked up from his typewriter, glanced at his chief, and caught the drift. "T'hell you have. I'd call that a low-down, mean trick to play on that kid."

"Yep, I know. Got to have a little fun sometimes. Things been pretty

dull around here—no wars, murders, kidnaps, scandals—Call him."

Jake Hanson grinned and went out. "Fitzhugh!" rang his stentorian voice. "The chief wants you right away."

Bill Fitzhugh, a pink-faced, sandy-haired, very tall and thin young man, with two college years of journalism and one of science to his credit, flushed a girlish red, hesitated, then hastened to the city editor's office, visions of tramping around for another job tugging painfully at the back of his neatly barbered head.

Hendricks twirled around in his swivel chair, eyed the scared young reporter for a moment or two with great seriousness.

"Fitzhugh—" knitting his forehead and compressing his lips, as if he were about to say something of the greatest moment—"Fitzhugh, I've got an important assignment for you. Got to break you in on the big stuff, see? You've been talking a lot of science around here and giving your ideas of futuristic Utopias. Now show us what you can do. Go, find that guy who calls himself the Utopian Reformer. And mind you, we want a good story." Hendricks flicked the ashes from his cigarette and abruptly turned back to his desk.

"But—" stammered the nonplussed young fellow. "Where am I to go—how am I to find him? I—I—"

"Well, now, isn't that nice! Want me to lead you by the hand to him? Go find him—and don't come back till you do!"

"But—"

"Scram!"

The astonished young reporter ambled almost absent-mindedly out of the office, stood for a moment undecided, and was off.

"I'll say, that's a mean trick, Clyde," grinned Jake Hanson, "sending that kid off on such a wild goose chase."

CHAPTER II

AUGUST the 1st arrived; a glaring sun, choking heat. There was nothing to indicate the day as different from others; the streets were clogged and jammed with their usual traffic. Perhaps it was the terrific heat, or perhaps it was that some drivers remembered the "crank" who had made the queer threats, and decided to show him up. At any rate, nearly everybody that hot day seemed bent on driving faster than usual, and paid less attention to traffic courtesies. An impish perverseness which we frail humans often evince when confronted with the unpleasant word "don't," somehow showed itself that day.

Be it said, however, in defence of the public, that everyone had quite forgotten the fact that the fatal August the 1st had arrived. The police kept a negligent eye for some dangerous "crank" or escaped "lunatic." Even Hendricks had forgotten about it, nor thought of the "wild goose chase" which in a prankful humor he had wished unto young Fitzhugh. Not even the creeping up of noon, the zero hour, was watched or heeded by the multitude.

But there was one person who awaited the zero hour with keen interest—Bill Fitzhugh. For several days now, uneasiness dragging his feet, he came and went from the offices of the *Daily World*, in fear of being called down by the city editor for his failure to track down the Utopian Reformer. If August 1st were only behind him. To Jake, who hailed him several times with a "found the

Utopian Reformer yet?" he mumbled a ferocious "No!" He had the uncomfortable feeling that he was being made the butt of some joke. . . . Still, no one could be really sure with Hendricks, sometimes a jokester, sometimes a veritable martinet. And so the only thing to do was to spend every available hour prying into every unlikely place for some possible clue to this self-styled Utopian Reformer—to perdition with him, if there were such.

The first intimation anyone had that the Utopian Reformer was anything but a myth, was a series of explosions which occurred at stated intervals up and down a stretch of Washington Street, one of the main traffic arteries of the city. Thither young Fitzhugh sped as fast as his long legs and a car could carry him. Taking his station at an important crossing, the excited reporter awaited developments. He did not have long to wait.

A machine that looked as if fresh from the assembly line came roaring down Washington Street, zipped across the intersection at the modest speed of only fifty-two—seventeen miles faster than even the speedy limit set by the city ordinance. A sudden flash—a bang! The nice-looking, fast going car stuttered, careened toward the curb and stopped, hopelessly out of commission.

Another came purring pleasantly along, the driver blithely ignoring the red light turned against him. Another flash and a bang—the car leaned crazily to one side, a rear wheel smashed awry.

Still another driver, insisting on his right of way, barely avoided several children in the act of crossing the street, swerved and bore down without slackening up on an old lady who had been slow in negotiating the wide

thoroughfare, forcing her to jump for her life. A hundred feet more, and he, too, stopped with a smashed motor.

From then on, an almost more or less steady string of crashes followed one upon the other. Fitzhugh rushed frantically about here and there, all expectant and agog with the "big story" being played. He saw and heard the frequent explosions, the crashes, the dismay of the drivers—as if small bombs were being heaved at the transgressors' autos. But it was exasperating not to be able to get a single glimpse of the perpetrator, or perpetrators—it seemed impossible for it all to be the act of a lone individual—of these punitive crashes. Nor, question onlookers as he would, did he gain the least shred of enlightenment to add to his own observations.

By six o'clock that afternoon, the entire street, miles long, was littered and blocked with hundreds of disabled vehicles. Some stood near the curb, some stood sideways, others in the middle of the street, cars leaning this way and that. The din of honking horns, the blocked and slow moving traffic, the cursing and swearing drivers, the perplexed and exasperated officers giving useless orders, rendered the entire scene almost a comedy. From one end of the street to the other, helpless machines of all kinds blocked the way, waiting to be towed away: old timers, stately limousines and snappy roadsters, sedans, burly trucks, luxurious busses—all had disobeyed some traffic rule. Outside of property damage, however, no one had been personally injured.

A great outcry arose, and a hunt started for the "dangerous lunatic." The public, which had blithely disregarded the notices of the Reformer, now severely criticized the police department for not taking due precau-

tions against such a "dangerous person." The chief and his subordinates racked their brains. They were quite willing to arrest someone—anybody, anywhere—but whom, what?

The following day Washington Street was deserted as if smitten with a pestilence. Some cars of ancient vintage were still standing where they had been struck by the unseen force, not worth the cost to their owners to have them hauled away. "They ought to rename this street, 'Junk Avenue,'" a wise-cracking observer remarked.

Under mammoth headlines appeared: "Recklessness Gets a Severe Lesson." And, "Authorities Negligent in Preventing Outbreak of Dangerous Lunatic." Another news-gathering institution, championing the inalienable rights of motorists to their highways, printed a scorching editorial: "The Public Must Be Protected."

Back in the editorial offices of the *Daily World*, the city editor, discomfited at his own laxness in taking the Utopian Reformer's threats so lightly, was all in a rage. The joke, which in a whim of fun he had sought to pull off on the cub reporter, was now on him. It had never occurred to him to take the thing seriously. Nor did the razzing he had got from the angry editor-in-chief, add any relief to his feelings; and so right down the line, one sore spot after another was trodden upon.

He bawled over the phone to Jake Hanson, the star reporter. "Go bring in that story."

Bill Fitzhugh had phoned in the exciting news, but not a word of the Reformer's identity. He strode into the office late that afternoon, tired and exhausted, keenly aware of his failure, and fearful of getting raked over the coals by the temperamental Hendricks. He almost jumped every time some-

one called his name. But to his relief, the city editor, who rushed past him several times, ignored him completely.

TWO days later, the Utopian Reformer shifted his activities to another busy thoroughfare. Habits are hard to break, and public memory can be horribly short. The scenes of the previous day were repeated. In a few hours this street, too, became clogged with broken, disabled machines. Cars that went too fast were usually ruined in the engine; other infractionists of safety usually suffered bent or broken wheels. Tempers generally were a total loss.

The repair facilities of the city's garages were strained beyond the limit. "It's an ill wind . . ." became for these folk an actuality, and they reaped a golden harvest.

By this time the authorities were thoroughly aroused. The papers came out with screaming extras; the news spread like wild-fire. Some timid folks became afraid to take their cars out altogether.

Another notice was received from the mysterious sender, and this time was given front page prominence without facetious embellishments. It read:

"Notice to all careful drivers: No harm will befall anyone driving with care and sense. Limit twenty-five miles an hour. Others beware.

THE UTOPIAN REFORMER.

During the course of the next week or two, many other busy thoroughfares went through the same experience in greater or lesser degree. Many luckless drivers learned to their sorrow that the Utopian Reformer meant what he said—and had the power to enforce it, despite prodigious efforts to apprehend him. His activities ranged all over the city. He seemed to

cover unbelievably long distances in a short time. No reckless driver failed to draw the Reformer's punishment. Wiseacre drivers, used to taking chances, suddenly found themselves through with their joy-rides. His ubiquity was phenomenal. Around schools and playgrounds, automobilists were particularly careful, for in their vicinity the Reformer's venom seemed to be the strongest. Woe to any motorist who failed to give a child the right of way.

The greatest man-hunt in the history of the city proved without avail. The police smarted under the public criticism of their inability to catch the offender; and the daily papers, forgetting their original light vein, lashed them unmercifully. The poor officers did not know which way to turn. Mostly they were kept busy helping stubbornly guilty culprits push their smashed cars out of the middle of the streets. Every man was on duty; extras sworn in; and even the American Legion enlisted to help run down the Reformer, but all without the slightest clue to his identity.

"Seen the Utopian Reformer yet?" the reporter maliciously threw at Jake Hanson, every time they met.

"Go ask Hendricks," was the growling flare-back.

Before long, every driver of a car or truck went his way, meticulously observing the rules of safety, leaning almost backward to do so. Reckless driving became rarer and rarer and practically disappeared—perhaps because every reckless driver's machine had been smashed or disabled. Everybody joined the "Traffic Obstructionist Club," as the slower moving traffic was nicknamed. Accidents almost disappeared, and the Monday papers had to find other matter to take the place usually given over to injured

and dead over the week end. An occasional punishing explosion brought the state of affairs back to those who forgot themselves, back to their fading memories. Traffic courtesies in the city around became a balm to the heart and a gladness to the ear. And for the first time since the advent of that useful vehicle called the automobile, mothers could send their children to school without a heart-tearing fear gnawing inside.

CHAPTER III

THE vexatious and potentially dangerous situation brought about by careless motorists having been satisfactorily disposed of—at least to the apparent satisfaction of the Utopian Reformer—that strange individual promptly switched his activities to other matters; to wit: the municipal government.

In that particular field of social progress, things had not been going so well. The political, and hence the governmental situation which existed in the city and county, was a soreness to the eye and a stench to the nostrils. There was a great deal of political wire-pulling and much graft, even in high places. There was gross inefficiency and wastage of the public funds, to an extent which, had they been serving a private corporation, would have landed many of those public officials out of a job quicker than a cat's wink. Many hangers-on were on the payroll whose chief work consisted in calling for their pay-vouchers. Taxes were the highest of any city in the state, and going higher. The city was overrun with vice and flagrant violators of the law, much of it under the protection of those higher up or lower down. Several near-scandals, involving "leading Citizens," were bare-

ly hushed up, and a goat made of some minor officials. And if the legislative and administrative powers were well below the Utopian ideal, the judicial branches were not impartial nor Solomonian in their decisions. One judge had been impeached only recently.

And so, like the proverbial bolt from the blue, the Invisible Reformer began at the top, that is to say, with the far and widely known mayor himself. This dignified, accomplished and jolly gentleman had been elected by the local political machine. Though highly efficient and capable in his self-furthering labours, he was very incapable and lax in the performance of his public duties, to say the least. He winked at political machinations. In private life a wealthy contractor, it was more or less an open secret that he profited greatly in the distribution of patronage, even though barely within the law, and in a few cases, dangerously without. The mayor, John B. Williams, was a perennially smiling gentleman of about fifty, jovially fat to the tune of 280 pounds, with ample paunch and generous folds under his smiling chin. He waved the flag at patriotic meetings, was frequently called upon to address the Rotarians, Daughters of the Revolution, visiting conventions, and other notable gatherings.

This leading choice for the highest honors of a great city, received a letter one day, making an unheard of demand in no mincing words.

Right Honorable John B. Williams, Mayor of our city:

It pains me to advise you that you have been grossly inefficient in the performance of the high duties to which your trusting fellow citizens have elected you. Your failure to live up to your campaign pledges has been a shame and a disgrace. Other things I shall not mention—you know what they are.

This is to serve notice that unless you re-

sign voluntarily from your office within five days from date, giving any reason you wish, you shall be forced to do so.

THE UTOPIAN REFORMER.

On receiving this letter, the honorable mayor rolled his eyes, puffed his cheeks, opened his mouth—letting his expensive cigar fall to the floor—and, to the shocked ears of the winsome stenographer who was taking dictations, exclaimed: “To hell with him;” and crumpling the offending missive in his chubby hand, threw it viciously into the waste basket, accompanying the act with a few expletives of a kind which the surprised young lady preferred not to interpret. On second thought, he stooped over with a grunting effort and retrieved the note. “Guess I’ll turn this over to the police,” he muttered to himself. Then, remembering the unsavory contents: “Guess I won’t.” The next day he quite forgot about it.

One evening, five days later, as the mayor was about to turn out his lights preparatory to retiring for the night, he was startled by a low, slightly muffled voice right in his room. He was alone, dressed in his pajamas, sitting on the edge of the bed which groaned beneath his huge weight.

HE fancied he was mistaken. The idea of any one in his room seemed absurd. An uneasy thought stirred within him . . . his physician’s admonition regarding his enormous overweight. “Guess I’ll have to reduce my diet; commencing to hear things,” and reached for the electric switch. Again the same voice startled him, and he jerked his hand away from the switch as if he had touched something red hot.

“My dear Mayor Williams:” the voice began, this time quite close to him. “Do not fear. No harm shall be-

fall you, unless you choose to disobey my orders; in which case I regret to inform you that you will undergo a very painful ordeal—yes, painful and very unsuitable to your dignity.”

Mayor Williams arose slowly to his feet on trembling legs, and stared in a ludicrous and frightened manner about the room. Clearly he doubted his own senses. “Who the devil are you? What is it you want?” Seeing nothing, and receiving no immediate reply, he made a heavy effort to look under the bed, but stopped, unable to make the incline.

“I am the Utopian Reformer,” the voice presently replied. “You have chosen to disregard the warning which you received five days ago, and I have come in person to remind you of it. I feel certain that in the privacy of this room you and I shall come to a complete agreement without being disturbed—no, do not call out; it will do no good; merely delay our interesting parley.”

“If it is my resignation you wish to discuss,” said the mayor evasively, at the same time looking furtively around and edging toward the door, “see me to-morrow morning at my office—and let me see who you are.”

“No, I’ve decided to settle this little matter of your office tenure right here and now.” The mayor heard the door lock click and saw the key disappear as if by magic. “Better sit down and let us talk this over as friend to friend.”

“And if I refuse?”

“In which case—er—well, as I said, its going to be a mighty unpleasant interview—painfully persuasive.”

“Then show yourself as a man, whoever you are.”

“No, thanks; I prefer my present incognito, which serves my purpose perfectly. Here, sign this written res-

ignation!" and to the astonished gaze of the mayor, whose eyes nearly popped out of his head, a sheet of paper bearing the mayor's own insignia and resignation neatly typed, appeared out of the empty air, right in front of his face.

"I say, this is pure witchcraft," the man's lips trembled in unison with his knees. "You cannot force me into this through your hocus-pocus trickery," and he made a sudden lunge for the door.

Without warning, a tough-looking hickory stick suddenly appeared as if by magic, curved violently through the air with a loud s-swish-sh, and finished up with its long stinging end in sharp and undignified contact with that portion of the body on which even a mayor has to sit. Another and another swish followed in rapid succession, somehow managing to find the same spot. The victim bellowed with rage and pain. In his scramble around the room to avoid the biting blows, which now came down in a perfect shower, the mayor's nether half of his pajamas slipped to the floor; and as he stooped to raise it up, the invisible wielder of the stick brought it down with resounding whacks on the now howling gentleman's anatomy, raising huge welts that were a caution to see. The belaboring continued with a monotonous, "Now will you sign!—now will you sign!"

Scared inmates of the house broke in the door. A strange, ludicrous sight met their eyes. Loud snickering broke from the servants. The mayor, sadly hampered by his fallen pajamas, was squirming around the room and rolling on the floor, yelling like a madman; a swishing stick, as if wielded by unseen hands, was punishing his bare legs and other parts till they were red-raw; a voice from nowhere repeat-

ing over and over in company with the strokes, "Now will you sign!"

The howling mayor broke past the shattered door, followed by the punishing stick which only redoubled its blows. He ran from room to room, by this time minus the embarrassing half of his pajamas; but no matter where he ran, up stairs or downstairs, he could not escape the terrible stick which followed him. Until exhausted and bleeding from many raw welts, he whimpered; "I'll sign. Please wait till to-morrow."

"Very well," a voice was heard to reply; "I'll see you to-morrow in your room promptly at the same hour. Do not try to evade me. You cannot do it."

The voice and the stick disappeared, and a groaning and inflamed mayor sought to make himself comfortable.

CHAPTER IV

IN the morning, Mr. Williams' secretary was advised over the phone that his Honorable was not feeling well, and would not be down to his office that day.

The news somehow leaked out in part; and Jake Hanson, smarting from the sarcastic flips thrown at him by the city editor for failing to unearth the Utopian Reformer, appeared promptly at the Mayor's home for an interview regarding the happenings of the night before.

"Nothing happened," snapped the mayor in a vicious mood, altogether unlike his usually smiling self.

"What does the Reformer look like?" came the innocent query from Jake.

"How in the devil do I know?" wrathfully. "Go meet him yourself," wincing with a suppressed groan.

Toward evening, his honor, John B. Williams, decided not to risk spend-

ing the night under his own roof. Moving stiffly he got into his waiting limousine and with a groan sat down gingerly on the edge of the softly upholstered seat. Cautioning his chauffeur to drive without jolting, he was driven to a down-town hotel, where he put up for the night.

In a comfortable room on an upper floor, the mayor made himself at home for the night. A thorough search was first made of the room and a guard of several stalwart police was placed in front of the door. Every possible entrance was securely guarded. With a sigh of relief, he partook of a hearty meal brought up to him. He felt secure.

When his hour for retiring came, he decided to sit up, or to be more correct, sort of sit and stand up, till after the appointed hour for him to meet the Utopian Reformer. With that ticklish hour past, and feeling that he had outwitted his tormentor, he decided to go to bed. Again assuring himself that no one was in the room, including a last minute inspection of the closet and bathroom, he began to undress, slowly, very slowly. He donned his pajamas, not without an occasional start and look around. Everything was serene and peaceful, the life of the great hotel faintly audible, the noises of the street far below. Aha! He had fooled him.

"Well, Mr. Williams," a quiet voice sounded direct in his ear. His heart gave a great leap, and he almost died of fright. "What made you go to all this trouble? My dear fellow. I told you I would follow wherever you went. Please quit acting the part of a run-away bad boy, and listen to reason."

Mr. Williams stood speechless, his heavy jowl down, his mouth wide open.

"Will you sign?" A wicked-looking

hickory rod suddenly waved close to his nose, causing him to jerk back involuntarily. "Shall I begin again?"

The mayor made a move toward the door—a couple of resounding whacks suddenly bit through his silken pajamas. He jumped with pain, but before he could cry out, felt something clap across his mouth.

"You fool!" hissed the voice right in his ear. "It will do you no good to call others or to try to get away. Do you want everybody to witness your mortification while I chastise you up and down the halls, clad only in your pajamas? Another move and I shall let my switch do its duty, though it may pain you more than it pains me. Do you sign?"

His Honor listened to the unseen speaker, saw the poised stick, and wilted. "All right; I'll sign."

"That's a reasonable man," A typed sheet appeared. "Get your pen—on this dotted line!"

The mayor read the sheet, hesitated a moment, but seeing the stick out of the corner of his eye, hurriedly signed his name.

"Now, that's just fine," the voice exclaimed. "I'll trust you with this signed resignation; see that it reaches the proper hands to-morrow. If you fail—" the mayor jumped as he felt the light tap on his anatomy—"If you don't hand it in, I'll be wherever you go, and I promise you it will be even worse than this."

With this parting admonition, the punitive voice and terrible stick disappeared, leaving a troubled and much shaken mayor to pass the balance of the night in peace.

The next day, Mayor Williams handed in his resignation to take effect immediately. A bomb-shell was exploded when it was announced to a

surprised public that the Honorable Mayor Williams, "a tremendous worker for the public good," was forced to retire on account of ill health. A long trip would be necessary to recuperate from overwork.

In the course of the month or two following, a surprising number of resignations were announced by important office holders. There was much ill health, or doctors frequently advised a change of climate, or plain personal business pressed for attention. "A faithful servant of the people regrets to announce—" For a while it looked as if the entire official family of the city and county would be depopulated.

FIRST came the resignation of the county treasurer, followed by several other important county officials. Two street commissioners and the city safety director retired shortly after, as well as a number of their subordinates. Then followed a series of political bombshells, when over half of the city councilmen resigned one after another, on this pretext or that.

And hard upon these resignations which rained out of the sky on the bewildered citizenry, came that of the chief of police. This important official had been appointed by his now retired superiors over the heads of several who had served much longer and were more able men for the duties required. Only recently his department had received a "white-wash," of which it had required a copious spread. Rumor connected his resignation with that event. But others, more in on the know, whispered of an exciting night at that gentleman's home—in sumptuousness quite out of proportion to a police official's salary—when a riot call brought almost the entire police force to his home to subdue a strange attack on their chief. They came, they

saw, but did not conquer. The chief was squirming and running around in his underwear, yelling and screaming with pain and fright, as if he had lost his mind.

"The Chief has gone goofy," one officer had remarked.

"Goofy! Look at that stick coming down on his pants like the vibrating reed of a saxophone," spoke up a captain who had only recently witnessed a similar performance of another official, since resigned from office. "It's that damn Reformer putting in his licks." In truth, it was a ludicrous affair, despite the terror-stricken antics of the chief, and those who saw it found it hard to keep a straight face. Then someone began shooting, and other followed. A stream of bullets shot in the direction of the plainly visible stick.

"Stop shooting, you fools," roared the captain. "Do you want to hit the chief?"

The chief finally sank on a chair exhausted.

"All right, big boy," a voice was heard to say. "Don't forget to-morrow!"

At any rate, the chief resigned. A severe shakeup followed with the rise of a new chief; many new faces appeared who knew how to go efficiently and honestly about their business.

Nor were the judicial and other branches of the local government neglected by the Reformer. One judge after another, whom certain gentry praised for their willingness to lend a willing ear and a ready hand, resigned unexpectedly. Even the prosecuting attorney, who was more interested in winning cases than in winning justice, resigned to "give better attention to a lucrative private practice."

For a time the newspapers had much front-page copy. Circulation increased, and editorial hands rubbed each other with satisfaction.

Gradually stories of the strange doings of the Reformer spread all over town, despite the efforts of the embarrassed ones to keep it quiet, about this amazing invisible man who carried a tough hickory stick that became visible only during certain painful interviews—this man who was able to get in anywhere and through anything without disturbing lock or bolt, and who could not be avoided or shaken off.

The good people at home and at work discussed these political oddities which exploded one after the other, and shook their mystified heads. But they viewed with satisfaction a great lessening of the unbearable tax-load, the noticeable improvement in law-enforcement and civic righteousness; and in general were quite pleased with the new efficiency and the successful outcome of government by the people and for the people.

Bill Fitzhugh spent endless hours nosing into the most unlikely places and gatherings, cultivating the acquaintance of all sorts of individuals, queer and otherwise, in the hope of uncovering the Reformer. Yet not altogether fruitless. The occasional "scoops," which he got on the doings of that mysterious individual's moves, long before anyone else got wind of them, brought him envy from his more experienced fellow workers and praise from his chief—and not least, a substantial thickening of his pay envelope.

Then came another sensation, even more mystifying, and this time much more disturbing to the public sense of security, than all the others.

CHAPTER V

ON the first of the month, Vernon Cothrell, the popular County Treasurer, was very much astounded, to say the least, when his head cashier and much trusted subordinate handed him the following curious and mystifying receipt which was found in the main cash box: "Received from the County Treasury the sum of two hundred, ninety-one dollars and sixty-seven cents, (\$291.67), in full for one month's salary. This amount I feel justified in taking. Advise the county commissioners that henceforth the above amount will be my unofficial monthly salary." Signed, "The Utopian Reformer."

A check-up of money revealed the amount of the receipt really was missing. The money had disappeared overnight where it had reposed in the huge steel vaults. The irate Treasurer threatened to arrest the Reformer for theft as soon as he could lay hands on him. The County Commissioners fingered the receipt doubtfully, inspected the steel cages, the burglar-proof safety vaults, the almost infallible time-clocks, and shook their heads in mystification. It was beyond them. The Treasurer ordered a sharp lookout, and a careful check-up showed nothing further missing from day to day.

When the first of the following month came around, Cothrell personally superintended the storing of the funds over night. He saw that the doors and combinations were properly locked. He also placed an armed guard.

In the morning he made it his business to be present at the opening of the vaults. Nothing seemed out of the way. Imagine his amazement when, upon looking into the cash box—an-

other receipt for \$291.67 left there by the same mysterious person.

Police were called; the premises thoroughly examined; but not a mark, not the slightest clew could be found. Everyone was dumbfounded. Many on the outside, quick to voice their opinions, as is usual with those who know least about a thing, declared it was all a hoax and a fraud. For a while suspicion was rampant.

Luckily for the new treasurer, his character was above reproach. In every circle the uncanny powers of the Utopian Reformer were discussed. The papers printed lengthy articles on the powers of the occult, on magicians of Houdini's type. And there was one learned treatise on the fourth dimension as a possible explanation, which everyone tried to read but few understood and nobody believed. After all, the average human mind is practical, and prefers to stick to common sense—which, again, can be and is easily fooled.

Canny bankers, merchants and others with cash or valuables grew worried and tossed about of nights. Suspicious housewives and other uneasy folk hid their precious valuables in unbelievably unlikely places. Heads of houses who missed money out of their pants pockets of mornings, cast suspicious glances until the wife told them she was short of change to pay the milk man. And good people who carelessly lost their bundles, or mislaid anything, their first thought was of the Reformer—who must needs have had more than all the warehouses in the city to store it all. And if that gentleman, evidently honest of heart and, if misguided, noble of purpose, could have heard everything that first impulse laid at his door, his ears would have burned off of him completely.

That he must have realized this, was certain; for shortly afterwards he felt constrained to publish another announcement: That no one need fear loss of their valuables through his agency; that only \$291.67 would be taken monthly from the County Treasury—and any other shortages anywhere could be laid to those usually responsible.

Therefore, there was a great sigh of relief. Whatever his powers, the Reformer was at least honest, and up to now anything but an unmitigated evil.

CAME one evening in the month of May, when young Fitzhugh, standing on the corner of Mulberry and Walnut Street, and turning over in his mind whether to move on or linger where he was, received the surprise of his young life. For hours he had been nonchalantly loitering in the vicinity of the home of a prominent citizen who, he suspected, might be the next recipient of one of the Reformer's unpleasant visits. It was a warm, beautiful evening in mid-spring, the soft air scented with the fragrance of lilacs now in full bloom. In another half hour, twilight would descend on the peaceful residential neighborhood. Aside from passing machines, and aside from himself, not a single pedestrian was in sight.

He was about to turn on his heel, when he was arrested by a, "Beautiful evening, isn't it?"

Startled, he whirled about to face the speaker, but saw no one.

"Gosh, looks like I'm beginning to hear things," Fitzhugh muttered sheepishly to himself. "Could swear I heard someone speak to me." He turned to go, but again was brought up short when he heard a soft laugh and a, "Nothing the matter with your hearing, young man. Stick around a

while longer; maybe you'll get something interesting to report."

Fitzhugh heard with amazement the unseen speaker who seemed right at his side. The voice had a slightly muffled sound, almost as if it came through a loud speaker. And yet—something startlingly familiar about that voice caught his attention—as if he had heard it before.

Bill quickly collected himself, and was about to ask for the speaker's identity, but realizing that no doubt such a question would not be answered, instead said: "Out crusading again!"

"Well, I feel I should do something in return for my unofficial salary," the invisible speaker countered with a chuckle, "to reimburse the people for their money; sort of earn my keep—eh, what?"

"To be sure, the things you have already accomplished have saved the people of this city and county many times your keep. But speaking of your unofficial salary, as you put it: just why do you take such an odd amount from the Treasurer's office? Why not even money? Or for that matter, a much larger sum?"

"Anything else you'd like to know?" ignoring his query.

"Oh, beg your pardon for my inquisitiveness; you know, I'm a newspaper man, and—" With that the young fellow, who for all his lanky slimness and almost girlish face, was possessed with sinewy muscles of steel, suddenly made a sweeping lunge with his long arms about the unseen speaker—and ended with a series of ludicrous clutches at the empty air.

"That's not a bit nice of you, Mr. Fitzhugh—after I was kind enough to single you out, so you could have some interesting news to report." There was an offended note in the

voice. "Good night, and good luck."

Chagrined at his own hastiness, and realizing he had muffed a wonderful opportunity for first hand information, Bill cried out:

"No, no, please don't go. I'm sorry, really sorry. I'll promise not to do that again, on my word." But he spoke to the empty air. The voice and the unseen presence had vanished.

"William Fitzhugh, you are a fool; just a plain, unmitigated fool," the young reporter gritted between his teeth. "A dunce. I wish somebody would take me by the seat of my pants and kick me all over the place."

Well, he at least got a clew, even though a faint one. But where had he heard that voice before! Though slightly muffled in tone, there was that strangely familiar ring about it. He ransacked his memory. And then something else, like an intuitive flash, suddenly struck him: the reason for the odd sum—\$291.67—taken from the County Treasury. Even if for moral reasons the Reformer did not wish the onus of helping himself to a large sum, as he proved he could easily do, why didn't he help himself to even money, say \$250, or \$275 or \$300: Certainly there must be a reason. Every first of the month, the same odd amount. Multiplied by twelve months it came out to \$3500.04 . . . His former salary! . . . Somewhere, somebody had received three thousand, five hundred a year! Another clew, and a poor one; just a guess certainly, yet something.

CHAPTER VI

LOST opportunity or not, new excitements crowded one upon another, for the Utopian Reformer did not for long remain idle.

A huge strike which Fitzhugh knew

was brewing in the city, broke out violently into the open. The leading industry, employing thousands of men and women was shut down. The pay in the huge plants, which meant so much to the prosperity of the city, was notoriously low, lower than in any other competing industry in the country. On top of this, a further cut was ordered. A strike was called, and in retaliation the company declared a lock-out till the workers were willing to accept the wage-cut.

A deadlock ensued. There was much suffering and unemployment: Riots and bloodshed. After a time the company opened the plants, and imported many strike breakers. More serious rioting occurred, and the state militia was called in to preserve life and property. To add to the seriousness of the situation and the ugly mood of the strikers, certain outside labor leaders arrived on the scene, making impossible demands which rendered a compromise unlikely.

Almost as if unconcerned, Alton D. Rensler, president and controlling stock holder of the embattled Corporation, was at the fashionable Country Club. It was a beautiful spring day, with a healthful tinge in the air. He was enjoying himself. He had just finished a round of golf, and, mouth-
ing a fragrant cigar, was resting on the spacious veranda looking out over the well kept grounds. He was satisfied with himself. Yes, this was a pleasant world indeed. . . . Anybody who worked as hard as he did and had the brains got on top . . . Always room on top. . . . Some expect plums to fall into their lap without going after them Many had the same chance he had That strike Oh, they'll come around to his way of thinking after a bit—who built up that place, they or he? Guess

he'd wash up and go into dinner.

He stopped on the way and twitted the pretty girl at the cigar counter. He leaned over and nipped the skin of her white throat with his fingers. She didn't like men of middle age, who were overly melting to pretty girls. But he was the enormously rich Mr. Rensler, and she needed her job, so she smiled sweetly—and he felt still more satisfied with himself.

Late next morning, well guarded, he arrived at his private office. He lit a cigar and settled himself comfortably in his chair to look over the reports of the day.

"Good morning, Mr. Rensler," a cultured voice in a well modulated tone addressed him.

He looked up and slightly turned his head, a frown on his face. He did not like to be disturbed thus unannounced. He would have to reprimand his secretary.

"Trust I am not disturbing you overmuch, but I have very important business with you."

Mr. Rensler, his short-cropped military moustache adding to the severity of his face, turned slowly in his chair to face the speaker, and seeing no one, frowned still more and swept the room with his eyes.

"Please to meet you, Mr. Rensler. I am the Utopian Reformer—perhaps you have heard of me. Come to have a personal chat with you."

Mr. Rensler, a wiry man of small stature, but a man of iron nerve, leaned back in his chair, an unperturbed expression on his face. He had been hearing quite a bit about this mysterious visitor What did the meddling fool want with him?

"What is it please?" he quietly asked.

"To see if I cannot help you find a way out of the unrest which at pres-

ent surrounds your business," the voice answered.

"Thanks for your kind offices; but I cannot discuss business affairs without seeing whom I'm speaking with."

"Sorry, but that is something that must for the time being remain undisclosed. However, I am standing just a few feet from you, and wish to assure you that anything which we may discuss between us, will be held in the strictest confidence."

"Regret, but I will not discuss anything of importance unless I may see who you are. Good day; I am very busy."

"In which case, we shall discuss things anyway. Listen carefully to what I have—"

The annoyed Mr. Rensler suddenly reached for the push button on his desk; but before he could reach it, received a violent rap over the knuckles. He winced with pain.

"Don't do that. You'll only waste your time and mine. I would advise you to listen in private to what I have to say. Any other move will only delay matters. Will you listen?—or would you prefer to meet me at your home this evening?"

"Go ahead." A sullen look came over the industrialist's features. He had heard some funny things about this mysterious man's calling on other men in their homes late at night, and he didn't relish any such experience.

"This deadlock between your company and the men," began the Reformer, "can be settled amicably. I know you can do a great deal about it, for you have the deciding voice. If you will make a reasonable settlement, these outside labor fomenters can be sent away—I'll give you my word for that."

"How do you propose to settle this trouble?" a shade of a sneer on Ren-

sler's face. "Pat the men on the back, I suppose?"

"Easy. Just post an announcement that the previous scale of pay will be reinstated. I have studied into it, and find the pay below the prevailing standard. I took the privilege of examining your balance sheet, and know for certain you can do it."

"That is none of your business." Sullen anger burned like fire-balls in the man's eyes. "This is a free country; the men are perfectly at liberty to get a job elsewhere."

"True, this is a free country," the voice replied, "but not always free for everybody to make a decent standard of living. Please remember, Mr. Rensler, many of these men and women have families and bought homes, and cannot easily go elsewhere. They have helped you build up your business. Besides, the prosperity of the town and perhaps your own, is involved. And further, fair play will lessen your labor turnover and increase production. Isn't that the modern tendency?"

At this the industrialist, his face livid with rage, rose violently to his feet.

"Who the hell are you anyway to tell me what to do:—you hocus-pocus impostor, a thief who helps himself to the city's money! So you're going to tell me! Begone; you are dangerous, whoever you are. I'll have nothing to do with you!"

"Very well, Mr. Rensler, if that's the way you feel about it. This is an important matter, and the welfare of many people is involved. I shall give you twenty-four hours to think it over. Unless you show your good graces toward a peaceful settlement—well, in that case I'm afraid I shall have to put you through an ordeal that, accustomed as you are to lord-

ship over men, will prove very undignified, to say the least—perhaps you may have heard of others who have already had the pleasure.”

Saying which, the Reformer’s voice died out.

As luck would have it, Bill Fitzhugh was just then sitting alone in the private waiting room that led to Rensler’s inner office. He had come for an interview and was patiently waiting for admittance into the sanctum sanctorum of the industrialist. He stopped twirling his thumbs when he heard Rensler’s voice through the closed door—heard another voice, with its polished cadence, the voice of the Reformer. He strained to catch the conversation, but could not make out a word.

A few minutes later, the private secretary admitted him into the inner office. It was plain to see that the man had been through some great excitement. His face was flushed and bristling with anger, and his eyes had a wild stare.

“I’m from the *Daily World*. Been waiting to get a statement from you, Mr. Rensler. What is—”

“Nothing new to state,” Rensler clipped off irritably. “I have already stated my position. Please see me some other day—I have a most pressing engagement.” He stood up, waiting for the reporter to leave.

Bill went out, but acting on a hunch, hung around outside, determined on sticking to Rensler’s trail. Something told him that wherever Rensler went, there would be the Utopian Reformer.

That same evening, Alton Rensler, his things packed, took a de luxe train for the California coast far away. Unobserved, the young reporter trailed him to the station.

Bill waited till the train pulled out, then raced for the offices of the *Daily*

World. He pleaded for permission to follow the runaway industrialist.

A day later saw the enterprising young fellow speeding toward the Pacific coast in a fast transcontinental plane.

ARRIVED in sunny California, and ensconced in the luxurious quarters of an exclusive hotel, Mr. Alton Rensler viewed with equanimity the outcome of world affairs, and his affairs in particular. Wires and radio reached all over, and he did not need to be home to keep in touch. This fool of a meddling trickster could now whistle. He chuckled with amusement when he thought of the meddler’s frustration at finding his object away indefinitely, destination unknown.

He played poker until late into the night with some friends; had a winning streak and was in good humor. And it was with a final cheering cocktail that he said good night, and took the elevator to his expensive suite.

In the privacy of his secluded quarters, he yawned sleepily, undressed, chuckling repeatedly to himself. Yohum, now for a good night’s sleep.

“Good evening, Mr. Rensler,” a pleasant voice rang out in the silent room.

Rensler, who had just donned his pajamas, straightened up as if a powerful electric current had run through him.

“I have come to finish the discussion we began in your private office back in the home town. Remember! By Jove, you do have a nice place here—I feel we will not be disturbed.”

With quick decision, Rensler reached swiftly for his robe, which was lying near by, in a sudden attempt to bolt from the room. But before he took two steps, the robe was jerked from his hand, and a sharp, stinging

blow whipped across the middle of his bent form, with a whack that echoed from wall to wall, followed by several others in quick succession.

"Ouch," he cried, face blanched, hands behind him hugging the hurt portion. The next moment, unseen but powerful hands gripped his shoulders and he was hurled on the bed, where he lay wreathing with pain that stung and hurt frightfully.

"Now, my dear Mr. Rensler, we'll get down to real business. Do not create a scene. I dislike scenes. They are undignified. Besides it will only be the worse for you. I don't wish to hurt your—m-m-h—feelings any more than I have to. So will you please go back and settle on the terms I suggested?"

"Never!"

"In which case it shall be my painful duty to convince you." Saying which, the Reformer seized the struggling little man, and turning him across the bed, with his face smothered in the bed-clothes, rained a vigorous shower of stinging, burning blows where it stung the most. The important industrialist, clad only in his thin pajamas, bare feet and little legs kicking in the air, hands extended backwards like a miscreant school-boy as he endeavored to ward off the biting blows of the tough hickory rod, was a sight that belonged to the funny movies.

But it was not so funny for Mr. Alton Rensler, great captain of industry, financier, large employer of men. Not since he was a boy had he felt anything like it. Through an unbidden association of memory, a somewhat similar stinging experience, with his irate father on the delivering end, came back to him.

The Reformer finally ceased his belaboring, and the furious gentleman

slid to the floor, chattering with pain and rage.

"You shall hang for this, you shall rot in jail,—you—you—" and his voice, choked with pain and mortification, broke off almost with a sob.

"Shall I continue, or will you agree!" the inexorable voice demanded.

"Never!" Mr. Rensler, strong and wiry for his age and size, tried to wriggle away, but the irresistible grip forced him again over the edge of the bed, the swishing blows biting and burning into his quivering flesh.

"My God, stop! I'll agree to anything."

The swinging stick instantly stopped. "That's just fine. Now for the good of your feelings, and to save you further embarrassment, I'll promise never a word of this, well, er—discussion, if you'll return and do the right thing. But, remember: do not try to evade me again. I shall be at your side constantly all the way home, and until you have publicly announced a peaceful settlement."

WHILE this painful near-comedy was being enacted, young Fitzhugh was pacing restlessly up and down the thickly carpeted public corridor outside, past the suite occupied by the rapidly chastened industrialist. He could hear faintly the sort of subdued hubbub going on behind the locked doors. His sandy hair was all a mess from nervously running his fingers through it, and his small freckled nose twitched and his pale blue eyes snapped with excitement; but wisely he refrained from attempting interference. He knew that whatever the tribulations of the suffering one, the Reformer never inflicted serious injury.

The faint hubbub presently ceased,

and a minute or two later, he was startled almost out of his wits by that familiar voice again almost in his ear.

"Good evening, my young friend. Right on the job, eh?" The voice seemed somewhat out of breath, as if after a severe exertion. "You are quite an enterprising young man, I see."

Fitzhugh, though startled, almost jumped for joy. "Glad to hear your voice again. So sorry I displeased you the last time."

"If you'll promise not to be so rude again, I might favor you with some advance information. Besides, I don't mind telling you that my invisibility is not due to a method of refraction or form of psuedo-invisibility. My presence is imponderable to ordinary means of detection; therefore please don't make yourself ridiculous by trying to clutch at me. Here, pass your hand where you think I am standing." Fitzhugh did so, but he only fanned empty air.

"Does that convince you?"

"May I ask what makes you invisible and imponderable?"

"Anything else you'd like to know?"

Bill grinned, "What is to be your next move, Mr. Reformer?"

"Back to the home town. In so far as you seem to be a likely young man, I'll give you this information which may be of great interest to your reading public."

"I shall be grateful."

"You may announce in your paper that Mr. Alton Rensler has graciously agreed to settle the strike. Also, from now on, I may select you as my—well, sort of unofficial agent for announcing other reforms which I contemplate to usher in shortly. "Good night to you."

It was a scoop of the first magnitude. Two days before anyone else had any definite information, the *Daily*

World issued a flaming extra announcing that the generous Alton Rensler was en-route east, and would personally settle the great strike; even gave the all important details of the proposed terms of settlement, which were satisfactory to all.

Great was the joy in thousands of homes when the peaceful settlement was announced. Men and women flocked back to work in a pleased frame of mind. The news channels were very laudatory in their comments on the deciding part taken by the great industrialist and financier in bringing the strike to an all-round satisfactory close. He was praised for his civic interest and generous handling of the whole, now happily ended, affair.

CHAPTER VII

BUT back on his regular job, Bill Fitzhugh puzzled more than ever over the fascinating mystery surrounding the Utopian Reformer. More and more the young reporter, of a scientific turn of mind, was convinced that science only could explain the Reformer's uncanny power to assume a state of imponderable invisibility, and his still more uncanny power to ignore lock and key, or any kind of a barrier to ordinary flesh. Certainly he took no stock in explanations of a supernatural order. Science, plain, rigorous science, even if of a totally new and unheard of development, was at the bottom of it all.

And always, that slightly muffled, yet somehow familiar sounding, but elusive voice haunted him. Now positive that somewhere, sometime he had heard it before, he was irritated by his inability to place it. Or was it merely, after all, one of those psychological phenomena which nearly

everyone experiences some time?—the impression that what one was hearing or seeing had happened before. Again, there was that odd amount of the Reformer's self-assumed salary. Why the odd amount! For weeks, acting upon his hunch, Fitzhugh probed and inquired into the lists of laid-off workers and professional men in many lines of endeavor. His newspaper connection gained him access to institutions which otherwise would have been denied him. Every time he came across the record of an individual who had been drawing thirty-five hundred a year, he would trace that individual's record, only to find such a one either gainfully employed once more, or of such a type which no amount of imagination could possibly connect with profound accomplishments into the rarified fields of the higher mathematics and the physical sciences.

Thus weeks went by since last he heard the Reformer's voice; and he often wondered what that strange individual was up to next, and if he would hear from him again. But one day, just as he was about to alight from his roadster in front of his own home, he was startled by the familiar voice.

"Good evening, my young friend."

"Oh, how are you, Mr. Reformer? Awfully glad to hear from you again. Been wondering what had become of you." Fitzhugh, delighted, waited expectantly, the uncanny feeling of an invisible aura close to him.

"I have an announcement to make regarding some important reforms which I shall next endeavor to bring about."

"Very well; I'm all ears. I see you are bound to have Utopia here and now," Fitzhugh said with a smile.

"No end to reforms, you know," the

other answered. "But all I can do is try and hit the high spots."

"You sure have hit some high spots all right," laughingly.

"Yes, I dare say I have," joining in the laugh. "But seriously, I am happy to say," he continued, "that these other reforms I have in mind should not require the good offices of my hickory rod."

"And what may they be?"

"Personal behavior—morals or ethics, if you please."

"Sounds good. But don't you know moral reforms must come from within?"

"Yes, yes; I know. That's just what I am planning to do—create an urge from within that will hasten some badly needed reformatations."

"And pray, good sir, how do you propose to go about that? Don't you think when it comes to that, people should mind their own business?"

"All reformatations and progress of any consequence in the world have always come about because someone or some group refused to mind their own business—or it would never have taken place."

On the morrow, another of those strange announcements appeared, signed by the Utopian Reformer. This time everyone read with the greatest attention, having learned from previous experience that the mysterious man's powers were not to be taken lightly. This notice, however, was of an entirely different nature, and not a few chuckled with malicious glee, hoping the Reformer would carry out his threat.

IN essence, it informed the public that everyone in the city would be, at one time or another, under a sort of unseen and unheard surveillance. That whoever indulged in malicious

gossip, unfriendly acts, evil deeds, or planned someone's undeserved disgrace; or if one business rival plotted the ruin of another; or if one were unfaithful to their marital pledge; or if any other form or kind of sin was going on;—he, the Utopian Reformer, had access to their innermost sanctuary or council chamber, and the evil-doer or sinner would be revealed direct to those sinned against; thus exposing the rascal, the plotter, the deceitful and the wicked enemy. The righteous had nothing to fear.

On the corners and in offices and in homes wherever people gathered, this strange exhortation to refrain from sin on pain of discovery was discussed and talked about. The pulpit found praise for this new turn in the Reformer's crusading efforts. And there was much merry-making and good-natured bantry. It became a common form of greeting when two friends met: "Have you sinned today?" or, "Are you fit to cast the first stone?" or, "How fare you with the Golden Rule?"

True to his announcement, the Reformer circulated freely over the city, covering every section and class. At first no one took his activities along the lines of an improved morality as of much importance. Sin there always was and always will be. But gradually strange, disquieting, often times laughable reports began to circulate, filling many with dread or satisfaction, according to whether the shoe fitted or not.

Evil gossipers, for instance, were shocked and mortified when they found out that the object of their malicious shafts was mysteriously apprised of the identity of the mud-slingers. A business man, his plans all ready to ruin his rival, discovered with shame and dread that his rival

was forewarned in an unexpected manner. Unfaithful wives and philandering husbands never quite knew when their sinful excursions would be disclosed to their other half. Many cruel plans were thwarted, evil intentions nipped in the bud, victims forewarned, devilish lies nailed. Or gay Lotharios, of grandpapa's youthfulness, who sat in the seats of the mighty and posed as high-minded examples for the rising generation to follow, were sent home shamed and chastened by a quiet voice in their ear telling them they were being watched. Or a pilfering employe was apt to be unexpectedly called to the boss's office, his theft exposed, and given another chance to make good. Shameful neglect of an aged father or mother by children who bragged of their filial devotion, was revealed to neighbors and friends, thus bringing the finger of scorn into play. Evil habits of young men and women became known to the parents. And even perversion and degeneracy received a set-back when the brilliant light of disclosure was turned on.

The enviable news filtered into the outside world. The city's newspaper and local broadcasting stations cited long columns to prove that their city and environs for miles around was the finest model community in the world.

Then one day, Fitzhugh received a flash which gave him the first real clue to the true identity of the Reformer.

Untiring in his search for *the one* who, in pursuance of his theory, must have received, sometime in the recent past, a salary of \$3500 a year, he had obtained permission from the authorities to go over the records of the great university located on the outskirts of the city.

CHAPTER VIII

The rather old-maidish woman in charge of the records eyed him quizzically, almost with suspicion, and at first seemed reluctant to reveal the records he wanted.

"Well, there have been a number of professors and associate professors receiving that salary, who are not here any more. Of what possible use can such idle information mean to you, mister?" She looked at him pityingly, irony in her dry voice.

"I'm a newspaper man, see? It might help me to make better mud pies. So ask me no more questions, but just trot out the information I want—or shall I report to your superiors that you may have personal reasons for refusing to divulge—"

"No, of course; you may have it by all means," she hastened to reply. "Makes no difference to me." She shrugged her thin shoulders with icy resentment. "Let's see—here are some: Associate Prof. Flinkinger; Prof. Forster; Prof. Newell—"

Fitzhugh jumped as if pricked with a pin. "You mean Dr. Sterling Newell?"

"Yes; know him?"

"Of course. He was my physics prof. How long since he left the university faculty?"

"About a year ago."

"And the reason?"

"He didn't leave; he was let out—resigned, you know," and she giggled.

"Could you tell what he is doing now?"

"Nobody seems to know just what he is doing. Since you are so interested, you might go out to his house and ask him," she added with pointed sarcasm.

Fitzhugh departed in a highly elated frame of mind.

DR. NEWELL! His voice! Now it all came back to him.

Strange he hadn't placed it before. He remembered him only too well: a fine-looking man of thirty-eight, tall and of athletic build, with none of the pallor that often comes from an academic life. He had been very popular with the students, whose rights he always championed. Poor man, his little girl, June, an only child, had been run over and killed by an automobile just two years ago, and the tragedy had broken him up completely. The professor was an outspoken man, fearless and radical, uncompromising in his ideals, and made many enemies; frequently clashed with the University authorities—and evidently lost out. Had a reputation for his profound researches into the realm of theoretical physics; a great mathematician in the thin heights where few could follow him. His lectures on the fourth dimension, in which he specialized, had always been fascinating, and made everything so plain, almost anyone could understand it.

Yes, he felt sure it could be no one else; everything seemed to point he was on the right trail at last. But he'd have to be careful; the evidence, though strong, was roundabout and would take lots of careful investigation to verify.

Without revealing his hand, he took to prowling a good deal about Dr. Newell's home which was in a quiet section of the city. Careful inquiry from neighbors, without arousing suspicion, elicited information that "Professor" Newell was a man of exemplary habits; seemed to have a modest but steady income of unknown source; that he spent a great deal of

his time in his well-equipped laboratory at home.

All this merely strengthened young Fitzhugh's belief that the Reformer, or Dr. Newell, or whoever it was, was achieving his state of invisibility by means of some highly evolved apparatus radically new in the annals of science; most certainly not through anything that could be classed with the supernatural or occult—although it almost smacked of that to an unscientific mind. That Dr. Newell had profound genius, even his enemies had not denied; and if anyone was capable of achieving a state of invisibility through some new principle of physics, or by means of a practical utilization of the hypothetical fourth or even higher dimension, Dr. Sterling Newell was as likely to be the very man to do it.

Furthermore, if the Reformer achieved his invisibility by means of some great scientific discovery, then, he, Fitzhugh, could not conceive of such a feat without some form of electrical energy entering into it. And if such were the case, a powerful radio beam, or a magnetic field suddenly trained direct on the Utopian Reformer, should obstruct the workings of his secret mechanism as thoroughly as a monkey wrench thrown into a delicate piece of machinery—and bring him into visibility. He almost decided to enlist the aid of his paper to help him construct the needed apparatus. But what a job to lug about such a necessarily heavy equipment on the doubtful chance of having the opportunity to use it. And when he thought further, he realized that he was basing himself on a wrong premise; for if this invisibility was due to Newell's practical conquest of the world of the fourth dimension, then nothing, of a three-dimensional nature or agency he

could conceive of, would have any effect on a higher dimensional sphere. Regretfully he felt obliged to dismiss the idea of direct interference. If only he were not such a rank amateur in the higher realms of science and mathematics!

And yet, again, Fitzhugh felt that something ought to be done. It was too much power for anyone to wield. So far, be it said to his credit, the Reformer had chosen to move in the direction of righteousness. So far, so good; aside from an uncanny feeling of uneasiness which many felt, the public, secretly or openly, were in sympathy with the almost mythical Reformer's activities. But what if that strange individual should suddenly go berserk, or launch out into fields detrimental to the public welfare!

A number of times he debated with himself whether he should confront the Reformer the next time the latter addressed him, with a, "How-dy, Dr. Newell," or whether he should merely call on the actual Dr. Newell under the guise of his newspaper duties, and see the reaction. He finally decided against such tactics, as these might only serve to put the man on his guard. Besides, what positive assurance had he that he was on the right trail, after all! No. Better wait and see.

At this juncture, things unexpectedly came to a sudden head. The industrial unrest which was prevailing, caused the entire city to break out in a new uproar, in which the Reformer decided to take an active hand.

It all came about on account of the city's street car system. The whole city was threatened with a cessation of all service due to the disaffection of the employees. The trouble, bad enough as it was, was considerably aggravated by the arrival of several out-

side strike fomenters and trouble makers. Their leaders sought to bring about a tie-up, and interfered greatly with the strenuous efforts made by level heads to reach a satisfactory settlement.

Through a streak of luck, Bill Fitzhugh overheard this pseudo-labor leader make the vehement assertion that "no damned fakir like that what-you-may-call-him, Utopian Reformer who ordered me out of the city, can scare me like it scared a lot of fellows here." Bill instantly realized that the braggart must have had a visit from the mystery man; and knowing the peculiarly persuasive tactics of that lusty crusader, and sensing fun in the offing, immediately took up his watch inside the big down-town hotel where this labor leader was domiciled.

SURE enough, that very evening at the hotel, there was a great uproar and fierce excitement. Without any warning whatsoever, and to the shocked astonishment of the large number of men and women who packed the main lobby, this particular gentleman, thinly clad only in his underwear, of a sudden came running wildly through the halls and corridors and down several flights of stairs. He ran screaming as if the devil were after him, all the way down the grand staircase, past the tittering crowd which jammed the huge public lobby on the main floor; all the time dodging and twisting grotesquely in an effort to escape the much discussed, now plainly visible hickory switch which was being wielded lustily by unseen hands. As he dodged in and out of the jam of people, a near-panic ensued; screams, shouts, laughter. "Run," "Give it to him Reformer," "You're losing your underwear."

In the midst of the great commo-

tion, an astonishing thing happened. Close to the screaming, scantily-clad man, a faint halo of bluish light began to glow, grew rapidly brighter, then went out with a blinding flash; and in its place, and to everybody's further amazement, a hazy, human-like form took shape, became clearer, and—lo and behold! There stood a tall, queerly armored figure wielding the famous hickory stick.

The entire body of the queerly covered figure, from the top of his head to his toes, was sheathed in a shiny, finely woven metallic suit that seemed all of one piece. Even his face was covered with the same material. A scabbard-like case hung at his waist. On his back and connected with the suit was a large knapsack that glowed with a dull luminescence. In his metallically gloved hand, the hickory stick.

For a few moments the excited crowd stood still, too electrified to move. Then from many throats came a shout: "The Reformer! The Reformer!"

It was indeed the mysterious Reformer who had unexpectedly and in a most public way become suddenly visible. Something had evidently gone wrong with the workings of the suit or the mechanism which induced his state of invisibility. The actuating works had stopped, exposing him to full view in the very midst of his activities.

For a few brief seconds the exposed Reformer stood there as if stunned and as much surprised at the unexpected turn of affairs as anybody else. Although his face was masked, his extreme embarrassment was only too self-evident. Then panic seized him, and he made a dash to get away. In another moment, a wildly shouting, clamoring mob was at his heels. Laughter, hoots, screams, shouts.

The unreasoning mob instinct broke loose. "The Reformer! Stop him! Hold him!" a chorus of voices yelled. Scores of curious hands sought the fleeing man. With mailed fists he knocked over those who attempted to stop him; jumped down the broad stone steps and into the street, followed by the eager mob, whose curiosity to find out once and for all the identity of the Reformer, took on white heat.

With great jumping strides he ran around the corner of the building, across the crowded street at the risk of his life. Before he knew it, he ran almost full tilt into the corner traffic policeman who made a lunge at him, but was stiff-armed by the running figure and sent reeling. Pandemonium reigned. A short ways further on, some husky individual grabbed the fugitive and was felled like an ox by the lusty Reformer. But before the latter could get going again, he was set upon by half a dozen others, and all went down in a heap. But his prodigious strength stood him in good stead, for he broke away and continued his wild flight, determined to escape. Amidst tremendous excitement, he raced through the streets, by this time all in an uproar; up this thoroughfare and across that, the curious, shouting mob almost at his heels, as he dodged in and out.

He ran on, the mob ever growing in size like a gathering snowball. One motorist deliberately tried to run him down in the middle of a street. And one policeman, newly joined in the chase, pulled out his gun.

"Don't shoot, you fool," shouted Bill Fitzhugh, who was only a short distance behind the fleeing figure. "It's the Reformer; don't shoot him," others cried.

The fugitive, a powerful runner, finally cleared the main business dis-

trict, and raced through the residential section. Over fences, around corners, between houses, always managing somehow to keep ahead. At last, frightened, exhausted and panting for breath, he ran straight—for the Newell home, just as Fitzhugh expected he would; past his frightened wife who stood in the doorway transfixed with horror at the sight of the mob which bore down in a converging avalanche. "Something's gone wrong with the confounded machine," the Reformer panted.

In the doorway of his own home, he turned and faced his pursuers, who tried to crowd inside, and surrendered to several police officers. With a few deft twists of his hands, the Reformer removed his head piece, revealing his face—it was the well-known Professor Sterling Newell!

The unmasked reformer, now recovering himself, nodded to several who instantly recognized him, and with great dignity and a faint smile on his fine, scholarly face, bowed to the immense throng which packed the street.

Neighbors gasped with amazement when they saw that the much talked about and mysterious Reformer had all the time been living right in their midst.

The mob which filled the street and crowded the broad lawn and up the steps of the Newell home clear to the very door jambs, grew dramatically silent. A smile swept every face. After all, the Reformer's queer doings had been far from unpopular. Loud buzzing, laughter, good-natured banter. "It's Professor Sterling Newell—the Utopian Reformer." "Don't hurt him." "Leave him be." "He's all right." Such were the shouts that came from every side. One of the policemen thumped Newell heartily on the back

and shook his metallically encased hand. The good-natured mob, their curiosity now fully satisfied, burst into a cheer.

Bill Fitzhugh hung around till the crowd slowly dispersed. He chatted pleasantly with the Reformer, plying him with endless questions.

"On my trail to the last minute, eh?" the Reformer smiled. "You're a hard fellow to shake. I'm too excited and tired now. If you'll come around this evening, we'll talk."

CHAPTER IX

EVENING found Fitzhugh seated in Dr. Newell's pleasant living room.

"The vast bulk of the public is heartily in your favor," Bill began. "You have struck a responsive chord. No one, who has made the acquaintance of your gentle hickory rod," he added with a grin, "will dare come out into the open against you; and even if they did, no jury in this county would convict you."

"Now, the main thing which everybody is dying to know, is the secret of your invisibility."

Dr. Newell smiled, then grew serious. "That is something which must die with me. A revelation of the secret of such power, men being what they are, might bring infinitely more evil than good."

"But surely, in the interest of general knowledge, and to satisfy the public at large, you could at least reveal something of the marvelous discovery which you have made."

The Professor remained for a few moments in thoughtful silence; then replied:

"I cannot divulge the working principles of my discovery, nor the

forces that are involved. For that matter, their basic nature I myself do not understand, any more than we understand the ultimate nature of matter and energy, although we may know how to apply them to practical ends.

"This much, however, I will say: The secret of my invisibility is not due to the utilization of any new principle in refraction, nor has to do with any plane of existence in purely three-dimensional form. Least of all is it due to any kind of jugglery. Suffice it to say, it was my good fortune after years of intense research into unknown fields of mathematical physics, to discover a plane of existence which the science of the higher mathematics has long pointed to, although never materialized, and which, for want of a better name, has been called the fourth dimension. I have evolved a practical means of entering this hitherto closed fourth-dimensional plane or sphere of existence through a powerful process of manipulating and bending the space-time relationship, or Einsteinian Interval. That's all there is to it." His serious expression relaxed with a smile.

"That's all, eh? I see. Very simple indeed." Young Fitzhugh's pale blue eyes twinkled, and his short, freckled nose twitched, as it usually did when he was amused. "Well, if you prefer not to disclose the physical and mathematical details of your great discovery, won't you at least tell something of this fourth-dimensional sphere and your experiences of it?—something that will explain, even if remotely, your ability, for instance, to get in and out of sealed and barred rooms and containers."

"Very good—if you will be satisfied with a rough analogy or surface explanation," (Fitzhugh eagerly nodded his head,) and the Professor's brow

knitted in thought as Bill waited for him to proceed.

"To begin with, I shall ask you to consider one of the most baffling contradictions known to mathematical science, and long the most tantalizing of paradoxes in the entire realm of logic, namely: the commonly regarded unreality of the fourth dimension when it comes to dimensional *construction*. Yet any mathematician will tell you that the fourth and even higher dimensions are realities in mathematical *extension*, although our eyesight and other senses ordinarily stop at three dimensions.

"To go into this a little further." The professor leaned forward, a bright gleam in his eyes, as he warmed up to the subject. "If you will conceive the various dimensions as motions in geometry, we may then form the following concepts: The path of a point in motion, describes a line. The path of a line in motion, may be visualized as a surface or two-dimensional plane. Similarly, the path of a surface in motion can describe a solid. And the path of a solid in motion is—? Right here, by analogy, we come to the fourth and even higher dimensions.

"Mathematicians have been able to symbolize a figure in four dimensions, and even study its qualities. But no one hitherto has been able to construct it out of solid material, for our senses, as a rule, cannot go beyond the three dimensions without special aid.

"Now, by way of imperfectly illustrating the powers of my discovery, I shall draw on this sheet of paper a straight line which we will assume has no breadth or thickness, to represent an imaginary single-dimensional world in the ordinary Euclidean sense."

"But Dr. Newell," Bill interrupted, "even the finest line drawn on a sheet

of paper, as any microscope shows, has length, breadth and thickness. So has the tiniest point or dot. Has it not?"

"Yes, of course. But we are here dealing with mathematical abstractions only. Please remember that such things as a point, line or plane have no real existence of themselves in the eyes of geometers, but are used purely as imaginary tools of thought, mere abstractions, if you will—like color or sound, which do not exist apart from some existing object which causes them.

"To continue. A tiny being who lived in such a world which I pictured, that is, a straight line which has no breadth or thickness, could know of no directions outside of the straight line. It could never know the plane on either side or the space beyond. The tiniest object in its path would prove an insurmountable barrier, for it could not pass around it, over or under it. And yet, a two-dimensional being, one who inhabited the entire surface of the plane, could easily remove such a barrier or go around it, and appear and disappear from the limited world of this one-dimensional creature as if by a miracle.

"Similarly, imagine the miraculous feats with which a three-dimensional being could astound one who knew only a two-dimensional world. The latter could move in any direction on the surface of a plane, but not off of it. It could never enter an enclosed space represented, say, by the letter "O," such as I trace on this paper. But a dweller of the three-dimensional world could remove any object, including the two-dimensional creature itself, from such a two-dimensional room, simply by lifting it off the surface of the plane, or enter the room without passing through any of the

walls, "O," by climbing over or under. What an incomprehensible feat to a two-dimensional being, that would be!

"By the same analogy, a being who lived in the greater world of four dimensions, could enter or leave this room you and I are sitting in, or remove any object in it, even if the room were absolutely sealed, without passing through the four walls, floor or ceiling. Such a being could, if he wished, keep himself entirely invisible and imponderable, as far as ordinary human senses could know. To a three-dimensional being, this seems impossible; but to a being who moved in four dimensions, it would be as easy for him to reach inside this room, not through any of its three-dimensional walls, floor or ceiling, but in the same way as the three-dimensional being ignored the two-dimensional walls of the room, "O," through the fourth dimension."

Dr. Newell here paused, an enigmatic smile on his face, and awaited further questions by the young reporter.

"And the bending or manipulating, as you call it, of this space-time relationship—the Einsteinian Interval—how about that? I always assumed that such things were beyond man—possible only in the infinite crucible of the cosmos."

"Not necessarily," the professor replied. "You merely mean, it has not been done before," smiling benignly. "In some such way our earlier ancestors, if they woke up today, would view many of our modern so called miracles of science. The radio, mechanical flight, and a hundred and one other such "miracles," would no doubt fill their primitive souls with mystification. Their wise men would attribute these as belonging either to

God or the devil, at any rate outside of man's province altogether."

"But what has this bending or manipulating of the space-time relationship got to do with the workings of your great discovery? Your ability to become invisible, for instance."

Dr. Newell eyed his young interrogator with a mixture of mild amusement and kind pity. "Well—if you think your editors will go to the bother of printing—"

"To be sure—"

"All right. Consider further our revised conceptions of time and space. As we know today, taken as a whole, there is no such thing as absolute time or absolute space, but rather an intimate union of the two—space-time, which, as I mentioned before, is called the Einsteinian Interval. This has been interpreted by modern physicists to mean that time itself is but the fourth dimension of space. As proof, we now know that the apparent dimension of any object, or, if you will, the space it occupies, varies with the velocity. On the other hand, time, as measured by our standards, also depends upon velocity—thus indicating some profound relationship between space and time.

"Therefore, by altering or warping this space-time relationship, such as retarding or advancing its general rhythm or tempo, however minutely, many strange and inexplicable phenomena can be brought about; that is, inexplicable to those who live a three-dimensional existence. Time being relative, or a mere function or dimension of space, will, if subjected to a powerful change—such as my apparatus is capable of—take any given object with which it is connected completely out of our ordinary means of detection. For in so far as our mind ordinarily is conscious only of the

present while it is in the very instant of passing, any powerful variation in the relative tempo of the space-time Interval, may remove an object completely outside the ken of our consciousness."

"I should think that this tempering with space-time would require the agency of a tremendous amount of energy, more than is humanly possible."

"Yes and no. All depends how it is done. Tiny man can lift an elephant. A fulcrum and a long enough lever, you know, can lift the sun itself."

"I see. Now, one more thing. How were you able to carry that hickory rod of yours without revealing it while in transit?"

"Oh, very easy; carried it inside a

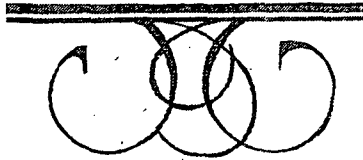
sheath that was part of my invisibility equipment. I removed it from its sheath only when I had—er—a duty to perform," he added with a soft chuckle and a gleam of his bright blue eyes.

"But, Dr. Newell: why a hickory rod?"

"Well, you see, for one, I did not wish to inflict serious injury to anyone. Second, I am a schoolmaster—the schoolmaster and his rod," smiling—"and as most men are merely grown-up boys, after all, I knew there were none who could long withstand a vigorous application to the right spot. All perfectly simple, isn't it?"

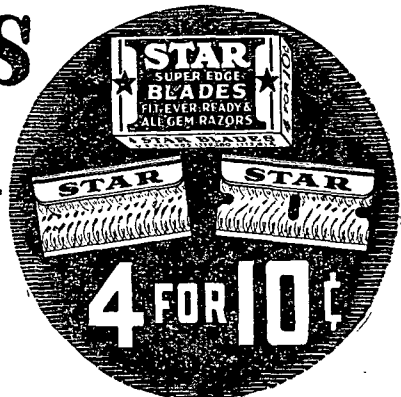
With that, the Reformer stood up, signifying the interview was at an end.

THE END



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The Maelstrom of Atlantis

By JOSEPH WM. SKIDMORE

It seems that the lost Atlantis always leads to a good story from the days of Plato to the present time. In Mr. Skidmore's story we have many thrills and there is a delightful spice of adventure with an impressive ending. The atmosphere of strife and danger, which are so bravely coped with in the first part, continue to the very end.

Part II

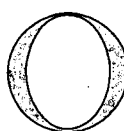
What Has Gone Before:

Don Calvert and his fiancée Joane Cromwell, returning from Paris in their small blue monoplane, receive an S. O. S. from a ship in the Atlantic. The ship is caught in a maelstrom and disappears before their eyes. Joane and Don had two loves—each for the other and both for adventure. They decide to investigate this strange phenomenon and take along Dr. Benson, a close friend and the greatest authority on water currents, etc. In a specially constructed steel sphere they start their adventure. On the ocean bed they feel themselves being rolled along and on opening a slide in the sphere they discover they are being moved along by monsters with arms like steel levers—octopus people. When the rolling motion stops, the three slid out of the opening in the sphere. They find they are in a dry cavern surrounded by octopods. A battle ensues and they make for one of the openings in the cavern. The three cautiously proceed through many miles of corridors, always climbing upwards. "Look ahead," cried Joane, "we have come to a wall." "It's a steel door," stated Calvert. Protruding from the steel itself was a lever-like handle. As Don clutched the handle, a great booming vibrated through the cavern. After some time, the great steel door slid upward. It was as though the curtain had been lifted on a mighty stage of people and scenery. Thousands of soldier-like figures, standing in precise military formation, were lined in the cavern beyond the door. "A race of people," shouted Dr. Benson. It was True! All the squat muscular figures with long arms that reached nearly to the ground were covered with some black, metallic looking substance. In a moment Joane, Don and Dr. Benson passed under the steel door and advanced between the soldiers. Finally the long line made an abrupt turn and there ahead

of the three was a sight which nearly froze their blood. Standing on a mammoth sea turtle stood the huge figure of a grotesque human with gleaming eyes and an enormous brain case, indicating a shrewd but cruel intelligence. "It must be their king," said Dr. Benson. "I am going to try to talk to him." "Great Cosmos!" burst from the doctor, "he is talking to me in the language of the lost Atlanteans. He says, 'Welcome, friends, to the City of Mu'."

CHAPTER XI

A Sunken Race

 BEYING some mysterious, unseen signal, the gigantic turtle upon which the king stood moved forward. Perhaps the weird ruler of the underground world was testing the nerve of his three visitors. If, however, he expected any show of cowardice or fear on the part of the three adventurers, the king was greatly disappointed.

Joane, Calvert and Doctor Benson resolutely stood their ground. The immense turtle advanced until it was but a few feet distant.

"If it tries to attack," hissed Calvert, "pour lead into both its eyes."

A multitude of the warriors had drawn up in close array behind the three, and



Then quickly he snapped up the inert body of King Zama and with an effort that Hercules would have envied, he swung the sodden body aloft.

they showed a slight indication of nervousness, and their sword arms twitched when Calvert, Joane and Doctor Benson drew their automatic revolvers.

"Hold your ground," ordered Doctor Benson, in a tense voice. "I am sure the king doesn't mean us any harm. I think he's testing our courage."

It was a dramatic moment when the huge sea turtle extended its repulsive head like an unfolding accordion. The wrinkled, turkey-like neck, ending in a huge, vicious head that was shaped like that of an immense rattlesnake, advanced slowly but relentlessly until the tip of the horned beak actually touched Calvert's body. Calvert, ready to spew out leaden death, did not flinch. He had made up his mind that if the beast opened its beak, he would blaze away into its beady, staring eyes and save two slugs for the king.

For a moment the reptile stared intently at each of the adventurers and then gently carressed its beak over Calvert's tense body. Calvert had the sudden feeling that they were masters of the situation. Apparently the brobdignagian turtle meant no immediate harm.

Even in this dangerous situation, the academic Doctor Benson could not restrain his scientific impetuosity.

"A gigantic sea turtle, a mammoth specimen of the order Chelonia. Rock fossils show that turtles have existed on earth since the very first of any form of life."

Calvert smiled grimly at the words of Doctor Benson. Joane stood her ground bravely and courageously. Calvert, with customary, impetuous courage, stood protectingly to the front. The turtle suddenly began to retract its head into its horny shell. The king standing imperiously on the smooth, rounded back of the sea reptile, was evidently pleased at the temerity and courage of his visitors. He raised his arm. It was some

sort of a signal to his soldiers. He uttered great shouts, guttural and musical.

"He is motioning to you, Doctor Benson," cried Joane.

"Yes, you are right, Joane. He is addressing me. Listen. I'm trying to understand what he says."

After a moment the scientist spoke in glad tones. "The king says his name is Zama. He tells me he is king of all the underworld. Says we are his guests and are welcome. Asks us to come to his royal quarters, where we will be fed."

With an anxious look at the strained expression on Joane's tired face, Calvert spoke.

"Tell him we need sleep, desperately."

Slowly and painfully Doctor Benson shouted deep-toned notes to King Zama.

"He says to follow him."

Instantly the great turtle turned like a huge war tank and tractor-like began to move slowly and smoothly across the polished rock floor. It was a strange procession that moved through the corridors and domes lighted by the mysterious, luminous glow emanating from the walls and ceilings.

The great, crawling reptile and the proud figure of the haughty king, armed with two swords, proceeded first. Following closely came the three intrepid adventurers, seeming to form a helpless group—but not helpless, for they were armed with the greatest and keenest weapon that humans have ever possessed—the weapon of highly developed reason. Weary and tired they were; their limbs seemed to be of lead, but the tempo of their courageous hearts was strong and sturdy. Closely behind followed the slouching, chattering Atla. The three were now sure that Atla was not of such a highly developed race as King Zama and his subjects. Atla seemed afraid—out of place. Behind all these

followed in orderly, marching file the multitude of soldiers. They stepped as one vast machine, actuated by one single mechanism. On their ape-like faces was depicted no surprise. Had it not been for the flexibility of their movements, that were strangely fish-like, they would have seemed to be men of machinery—automatons.

The procession moved along until Joane felt she would cry out from sheer exhaustion.

"You are tired, my dear one," breathed Calvert, helping her with a sturdy arm. "I think we'll soon be where we can have food and rest."

Calvert's prophecy was fulfilled. Shortly the king and his remarkable steed turned into a great, domed cavern that was lighted with a more brilliant light. Three adventurers gasped at the richness of the furnishings and equipment in the cavern. Directly before them was a long table of crystal-like substance. Around the table were benches of a similar material. On the long table were piled dishes of strange looking foods, fruits and vegetables. Even in their bewilderment the three noted that most of the dishes were made from polished tortoise shells. Their gaze travelled onward to rest on a mighty, canopied throne placed about two hundred feet beyond the banquet table. A strange pedestal of some brightly scintillating precious stone towered high. Opalescent it gleamed—some translucent moonstone. The throne extended in height some twenty feet above the level of the table. Entirely surrounding the strange throne was a moat or canal of water. From the water there gleamed innumerable vicious eyes.

"Giant eels!" exclaimed Doctor Benson, "the King's bodyguard."

They observed that the large, domed cavern was constructed entirely of the

moonstone material, disclosing all the beautiful colors of the rainbow, scintillating and dancing.

WITHOUT stopping in its tractor-like movements, the immense sea turtle slid noiselessly off into the moat of water and swam across to the throne. The king dismounted lightly and gracefully and with the movements of a trained athlete climbed to the top of the throne and seated himself. He proudly drew about his body strange, dark robes of some heavy, leather material. The huge turtle immediately sank into the pool with only its horned head protruding from the water. It placed itself in a strategic position, so that its unblinking black eyes could watch any approach to the throne.

"The King's bodyguard," suggested Calvert. "That pool is full of sea-reptiles to guard the king."

At that instant a terrific, snake-like body slid from the water and coiled itself at the foot of the king's throne. Its incredibly long and shiny body stretched a full hundred feet as it coiled in a great heap at the king's feet.

"Great Cosmos!" muttered Doctor Benson, "a giant electric eel of the genus *Electrophorus Electricus*. Even a small one can give an electric shock to disable a man or a horse. The king is extremely well guarded from treachery on the part of his subjects."

"The soldiers don't look like they had initiative enough to harm anyone," analyzed Joane, her voice now very thin and tired.

"Wait!" exclaimed Doctor Benson. "The king is speaking to me."

After a moment Doctor Benson turned to his two companions.

"King Zama wants us to sit at the table and feast. He says we will then be shown to rooms, where we can rest. Let's sit down."

Without a word they seated themselves at the table. Gingerly Doctor Benson reached out and from a polished tortoise shell took a bit of food.

The utensils for eating were cut from curved, carved shells and were like familiar knives and forks.

"Some sort of fish," stated Doctor Benson, "and it's very palatable and well cooked. A little greasy for my appetite, but very acceptable at the moment. Say, folks, where is Atla!?"

No one replied. Atla had disappeared! Others were seating themselves rapidly at the table. This group seemed to be of a more intelligent order than the soldiers. They conversed animatedly and looked at the three visitors with frank, staring curiosity. They were clad as were the soldiers, except that their raiment was of finer texture, and they carried no weapons. Each wore a long robe or mantel of the black, heavy material. Evidently they feared or greatly respected their interesting visitors, for a vacancy was left on each side of the three.

At some unseen signal the last group that had seated themselves at the table fell upon the food with wolfish voracity. Many did not pause to use the utensils, but eagerly wolfed the food into their protruding, fish-like mouths with amazing celerity—like starving dogs bolting raw liver.

"This bunch must be the king's counsellors," observed Doctor Benson. "The food is good. Let's eat."

Custom is powerful and plays an important part in the lives of civilized humans. Joane, Calvert and Doctor Benson carefully observed all the niceties of etiquette and table manners, to the great astonishment of their hosts. They tried several of the dishes and found each to be palatable, but all unquestionably of a fish origin, except one meat-like substance.

"I believe this is turtle," guessed Doc-

tor Benson, "and it's very tender, just like a tender sirloin steak at the Ritz."

Joane sat back, her hunger appeased, but the two men continued to eat. King Zama did not feast with his guests. He sat proudly on his throne while below him the fearful pool of incredible, dangerous eels and reptiles writhed and boiled with twisting bodies.

Calvert nudged Doctor Benson, nodding at Joane, who had leaned over with eyes closed. Divining Calvert's wishes, Doctor Benson arose and addressed the king. The king answered in a few short syllables, and instantly the entire group of gourmands ceased bolting their food. Evidently it was the rule that when the guest was finished, the others must also cease eating. It was plain, however, that their insatiable hungers were still unappeased.

"King Zama says," informed Doctor Benson, "that we will be escorted at once to quarters where we can rest."

Two of the taller and more intelligent looking Atlanteans rose from the table and indicated to the three they were to follow. Again they were led through the immense cavern, through a smaller passageway and finally into a large room that was obviously a private chamber. Joane in spite of her tired mind and throbbing body gasped at the beauty of the room. The walls and even the floor and ceiling were of turquoise-like stone, reflecting a deep, restful color. There were no furnishings in the room except soft coverlets, piled at random and several small tables and an equal number of polished stone stools. Two connecting smaller rooms were bathrooms.

The three adventurers were too fatigued to take much note of their surroundings, and they felt greatly relieved when their guides departed without a word and closed the smoothly fitting door, that was constructed of the same turquoise-like stone.

In a few moments Calvert and Doctor Benson made Joane comfortable in a far corner and covered her with the soft robes.

"Sharkskins," observed Doctor Benson, "tanned and softened by some process. Let's get some sleep."

Joane did not hear Doctor Benson.

Hypnos, the God of Sleep, had claimed her tired mind and body.

CHAPTER XII

Traditions of Atlantis

DOCTOR Benson's chronometer showed it was ten hours later when the three adventurers were startled by the musical vibrations of a deep-toned instrument ringing through the room.

"I slept like a dead man," yawned Calvert. "Great Scott, I'm hungry. Wake up, Joane!"

As though Calvert's statement had been overheard, the polished door of the room silently opened. Two Atlanteans entered bearing large tortoise shells heaped with food. The messengers retired to one end of the room and waited patiently.

After a bit Joane, Calvert and Doctor Benson began to partake of the offering with hungry enthusiasm.

"More fish!" grimaced Doctor Benson. "Well, anyhow they say fish is good brain food, and we're going to need all our wits. Do you know, folks, I didn't fancy the gleam in King Zama's eyes when he looked at Joane. He seems gracious and friendly enough now, but I believe we'd best think out some plan to impress the king with the idea that we have supernatural powers. After all, fear is our greatest weapon."

"I wonder what kind of food this is," commented Joane, gingerly inspecting a small, kelpy fruit.

"It's a kind of edible sea moss," en-

lightened Doctor Benson, "and it's very palatable. Reminds me of Captain Nemo's adventures in the fabled 'Nautilus.' You remember he gathered edible seaweed in his marvelous submarine and invented many delectable dishes."

Their hunger was soon appeased.

The two ape-like Atlanteans signalled to the three they were to follow. The two soldiers were heavily armed, and kept a very watchful and somewhat fearful eye on the three. It was evident they regarded their three astonishing visitors as very dangerous and important. Doctor Benson spoke in guttural, twangy tones to the two soldiers, but they did not reply—only beckoned in a subservient manner.

"They want us to follow," grunted Doctor Benson. "No doubt King Zama wants an audience with us."

The three walked more confidently this time down the polished corridors. Sleep had refreshed their worn bodies and minds. They felt confident—able to cope with any situation, however desperate. They realized they were the masters mentally of this strange race, even of the uncanny Zama.

When they turned into the throne room, King Zama was apparently expecting his guests. Clothed in more pompous regalia than before, he was proudly poised on the back of his mammoth steed, the gigantic sea turtle.

King Zama, who apparently had a sense of dramatic values, was waiting for his guests at the entrance of the throne room. His attitude was very friendly. Upon observing the entrance of the three, he sprang lightly from his bizarre steed and advanced towards his guests, both hands raised above his head, palms extended.

The ancient sign of friendliness," whispered Doctor Benson, "palms extended outward! Since the birth of time man has thus shown to a visitor his

harmless intentions. The open hand, palm outward, showed plainly that he held no weapons. A wise man who approaches an angry dog will hold his hands palm outward."

Joane and Calvert were too interested in their surroundings to catch the philosophy of Doctor Benson. He was now speaking to the king; his tones were more confident than before.

"What do you think, Joane and Calvert?" asked Doctor Benson in astonished tones. "King Zama wants to take us on a tour of inspection to show us the lost city of Atlantis. What a chance! How the International Research Society will gasp when I read them a paper on the lost city of Atlantis. The king thinks we are deities of some sort. I'm going to play hard on this thought. He is a shrewd customer. He has a very crude and untutored savage mind, but also has certain highly developed powers and intuitions. I think it will be best, my dear friends, if you two do not attempt to learn the language. I will carry on all verbal intercourse with him and with your splendid advice, I am sure we can outwit him. After we have seen the city, we must begin to plan on some means of escape."

"How are we ever going to reach the surface of the world again?" asked Joane, dismayed at the thought.

"I don't know," answered Calvert. Then adding with the usual fortitude of the extremely courageous, "Surely there will be some way offered. Anything is possible, considering our incredible adventures so far."

"Time enough to worry about that," protested Doctor Benson. "Zama wants us to start at once."

"Let's go," urged Calvert.

"But wait," gasped Doctor Benson in surprise. "Zama wants us to mount the turtle and ride with him. Apparently it's beneath the king's dignity to walk.

He says no one but himself and many kings before him have ridden on the back of the sacred turtle. I'll bet that turtle is several thousand years old. You know those sea turtles reach an incredibly old age."

"I'm not afraid," laughed Joane, with her usual bravery. "What an adventure!"

Zama was now motioning to his visitors with guttural intonations. The three adventurers started forward. It was then that King Zama proved that among his virtues were those of gallantry and consideration for the fairer sex. With all the polished manners of a Chesterfieldian gentleman, he tenderly grasped the arm of Joane and assisted her to clamber to the top of the turtle's back. It spoke well for the brave girl's courage that she did not shrink from the physical contact with the grotesque ruler of the underworld.

The three were forced to crowd close to the king, but once securely footed, they found it astonishingly easy to maintain a balance on the wide, gently curved back of the great turtle. That reptile, who seemed not to mind the added weight in the slightest, moved forward. The king had uttered no command, and it was apparent he had mental control over the brain of the gigantic beast.

Smoothly they moved along. A small group of picked warriors of the tribe marched in close formation at the rear of the king and his guests. It was obvious now that King Zama did not fear physical violence from his visitors.

"A bad sign," muttered Doctor Benson, ever on the alert for the unexpected. "Familiarity breeds contempt."

"Never mind," soothed Calvert. "Let's make friends with him."

Zama became very voluble. He incessantly rumbled forth information which was translated by Doctor Benson to his interested comrades.

"These people," began Doctor Benson, shifting a bit to preserve better balance, "are a strange combination of science and ignorance. From what Zama tells me, there's no doubt but that they're the ancient Atlanteans. Zama says that many thousands of years ago they lived in an upper world, which seems very strange to him. He speaks of traditions about a large bowl of sky, in which were stars, a sun and a moon. He tells me there came a great flood, that a continent was submerged. He says the people had known of the impending disaster for many thousands of years, had prepared for it with the construction of underground caverns and passages in the solid rock. Describes how most of the Atlanteans perished, but that many thousands were saved by retreating to the caverns and hermetically sealing the steel doors that had been prepared. It seems they were not yet ready for the catastrophe when it occurred, but needed a thousand years more of engineering and preparation. Zama says that after many hundreds of years of revolutions, the submerged people reverted to practically animals and lived on fish from underground small seas. He says there are many thousands of caves and passages. He describes how the race became divided, and a terrific warfare of many hundreds of years ensued between the intellectuals and the animal type."

THEN with a bit of fine sarcasm, Doctor Benson added, "Zama thinks he and his people represent the acme of civilization and scientific learning. Wait until I spring on him some of the things we scientists of earth have discovered."

"Let him tell you everything he will," urged Calvert. "Get all the information you can."

"I will," agreed Doctor Benson.

While the two were speaking, Zama

turned to look with sudden interest at the two men. They observed a sudden, cruel, knowing glæam flash into the king's eyes, but his guttural voice continued. All the while the turtle was moving along without the slightest bit of lurching, and by now the three adventurers were quite accustomed to the movements of its body and were able to retain their position and balance with little difficulty. Doctor Benson continued to divulge information as Zama went on.

"The king says that eventually the lower race or animal-like people were forced to retreat to the lower regions, where they were subjected to a most horrible fate. In the lower and damper caverns and caves they were warred upon for many hundred years by the awful tribes of intelligent octopi. Gradually the octopods overcame the savage and ignorant people of the lower levels, and for hundreds of years they have bred them, using them for slaves and food. The Atlanteans have conducted a desperate warfare against the octopods, and with their superior intelligence, have succeeded in eventually driving them back. They have constructed huge steel doors in the various passages to prevent the invasion of the horrible, eight-legged octopods. A constant guerilla warfare, however, is maintained. Zama says that adventurous Atlanteans constantly lose their lives when they venture into the lower regions. Zama is ambitious. He is a crusader, a warrior at heart. He tells me that even now they are planning a great campaign against the octopods. He says his race is growing, and need the lower regions for expansion. How like the kings and rulers of the upper world, always ambitious to gain more power and territory, no matter how much blood is shed or what cost they pay for it all.

"Look!" gasped Joane, interrupting Doctor Benson, "A city!"

The turtle had turned through a long corridor into a great cavern about three miles wide. Before them stretched a strange and mighty city! It was laid off in streets like a world-city, except that the streets were very narrow and uncurbed, the pavements being carved from the very rock. There were no corners in that weird architecture. All the buildings were rounded and of a strange, circular architecture. They were built of some stone-like substance, apparently the same substance as the floors and walls of the cavern.

"They have been cut out of solid rock!" exclaimed Doctor Benson. "Think of the thousands of years of toil that has gone into the building of this city."

As the turtle moved along what was apparently a principal street, the three saw with great interest that each building had but one door and no windows. Soon they came to a large, circular park, in the middle of which reposed an immense, domed building. The stone that composed the structure seemed to scintillate more brightly than that of the rest of the buildings. Apparently it was constructed of some semi-precious stone.

"Their administration building, Zama tells me."

As they moved towards the building, thousands of Atlanteans would fall to earth, bowing submissively. They entertained a great fear and respect for King Zama.

"The turtle is going to walk right into the building!" gasped Joane.

"I wonder," chuckled Doctor Benson, "if we are to see their Congress and Senate in action."

CHAPTER XIII

Government and Religion

"JUST like 'Gulliver's Travels,'" said Joane, as the turtle advanced slowly into a magnificent hall.

Translucent, precious stones, glowing beautifully, made up the walls of the ornate, rounded room. The only furnishing within the room was a circular table surrounded by stone benches. There was also a sinister-looking pool that was much larger than that in the throne and banquet room. On a small island, centered in the pool, was a replica of the throne.

Steadily and smoothly the turtle moved forward, slid without a lurch into the pool of water and started to swim across. The hearts of the three adventurers skipped a few beats as they beheld writhing, twisting horrors that infested the dark waters of the pool. Thousands of immense eels, some at least a hundred feet long, writhed and twisted, churning the water into foam. Some of the larger ones rolled their repulsive bodies and vicious, loathsome heads half-way up the slope of the turtle's back as it plowed through the water like a huge tug boat.

"Electric eels!" gasped Doctor Benson. "Evidently they're trained or under the mental control of Zama. Our king apparently takes no chances. He guards himself against all possibilities of attack. We are indeed honored guests, that we are going to sit on the throne by the king's side."

They breathed a sigh of relief when the turtle climbed out of the water. At the foot of the throne, Zama leaped down lightly, pausing, however, to assist Joane.

The three adventurers scuttled hurriedly up the easy steps to the top of the throne. They were glad to be, as far as possible from the fearful, twisting eels that crowded the terrible pool.

They seated themselves by the side of the king at the top of the throne, which was about ten feet square and covered with heavy, velvet-soft skins.

Many heavily robed and mantled At-

lantians gathered about the counsel table. Some ceremonial business was at hand, for the subjects gathered about the onyx table carried parchments and scrolls, which they laid before them. These folk appeared to be of a higher type than the soldiers grouped together in an orderly mass, near the entrance to the building.

"They're bringing in some prisoners!" gasped Joane. "I believe they're going to hold court."

"Listen," begged Doctor Benson. "Zama is trying to tell me about this procedure. He tells me this is the meeting of the Tribunal—to judge prisoners who have broken the law. From what I gather, the counsellors seated at the table are merely figureheads. Zama is the law, judge and executioner supreme. No doubt this strange race has inherited some of the vast wisdom of the original and ancient Atlanteans, but has reverted in a great measure to the bestial cruelty of monsters. Remind me to ask Zama about the giant bats we encountered."

There was a sudden, brisk movement among the soldiers stationed at the entrance. Six warriors were dragging forward two shrieking and protesting Atlanteans. These desperate prisoners were unclothed except for a short girdle around their middle. Their feet and arms were heavily ironed, and it was with great difficulty that the soldiers dragged them to the edge of the pool.

Zama rose proudly to his feet.

"What does he say?" asked Calvert, as Zama began to speak in short syllables.

"He is ordering that the accused ones be heard." Doctor Benson by this time had succeeded in mastering quite a bit of the Atlantean language, but he could not understand the pleading shrieks and prayerful cries of the two trembling wretches. He listened intently to the words of Zama.

"Great Cosmos!" uttered Doctor Benson, "these two unlucky devils are accused of a crime. They have robbed some fellow citizen of his belongings. They admit their guilt and are pleading for mercy."

The trial of the two unfortunates was very short, for at a single uttered command of Zama they were dragged to the edge of the pool. It appeared that the gruesome eels in the pool sensed they were about to be fed, for the water began to froth and beat into a foam of frenzied motion. Long, black, sinewy bodies raised high into the air to fall back, twisting and threshing. A mighty cry arose from those assembled at the table—a mournful, prayer-like utterance. It was a signal. Zama had decided, and the powerful soldiers instantly threw the two struggling, shrieking Atlanteans into the fearsome pool! Crescendoing shrieks echoed through the vast dome—two single screams of mortal agony that ended in a gurgling, agonized cry. The fury in the water for a second became a Hades of motion—a maelstrom of horror.

With an effort Joane maintained her poise. She was sickened at the sight of the two wretches being sacrificed to the fearful eels.

Zama's cruel eyes gleamed more brightly for an instant. The terrible fate dealt out seemed to please him greatly.

Doctor Benson was fascinated at the sight.

"Zama tells me," he began in a voice that trembled a bit, "that all criminals are punished in this manner."

Another protesting, shrieking wretch was dragged forward. Doctor Benson exclaimed, "Zama tells me this poor devil is accused of selling Haski, a deadly drug that numbs the mind of the Atlanteans. It's made from a very rare seaweed and is smuggled at great peril from

the lower regions. From what Zama tells me, they aren't punishing this poor wretch for his commission of the crime, but rather for his omission to pay the fine assessed. From what I can make out, it's against their law, punishable by fine, to sell the deadly drug, but in the event the guilty one is unable to pay the fine, he is punished by this awful death. Zama says that the cost of government is maintained by means of fines for this and other offenses. If the fine is paid, the culprit is reinstated and allowed to go about his business to peddle dope again if he desires. After all," said Doctor Benson, in a philosophical mood, "how like our own government, when years ago it passed a very unpopular prohibition law for the purpose of exacting heavy fines from culprits they succeeded in catching. The idea, of course, as you well know, proved to be fallacious, as the cost, of enforcing a law that sought to regulate people's morals, proved to be more expensive than remunerative. It is not well for us to scoff at the seemingly ignorant customs and laws of this strange people, for it was only a few years ago that our own civilization did practically the same."

"I can't stand anything more of this," protested Joane. "It's fiendish. I—"

HER words were cut short. With an inhuman, animal-like shriek the condemned creature was thrown into the pool of death. To add to Joane's agony of mind, one immense eel made its appearance.

The creature slid from the pool and coiled itself about the throne. Its horrible, repulsive head swayed upward towards Zama caressingly. The king did not flinch; rather he stretched out a hand and affectionately stroked the hideous reptile on its ugly nose. After a moment Zama slapped it smartly, and the creature let its coils fall limp and

subsided into a coiled, inert mass at the foot of the throne.

"Great Cosmos!" breathed Doctor Benson. "These unthinkable things are the king's pets. They are showing their pleasure because they've been fed."

Zama then arose and harrangued his counsellors seated at the table. The latter rose to their feet, doffed their mantels, and listened with an attitude of great respect.

"He is giving them detailed instructions," breathed Doctor Benson. "He is dispensing weighty governmental problems with a single word. Zama is truly a king—mighty and cruel."

The counsellors about the table departed. Their places were instantly taken by another group of Atlanteans. They were dressed even more somberly than the others. They took their places about the table in a reverent attitude.

"Zama tells me this group is one of their religious organizations," stated Doctor Benson. "The king is very wise. All religious organizations must hold their meetings in his presence. Evidently he controls even their spiritual sentiments."

The three adventurers then witnessed a most astounding ritual. Two of the group gathered at the table remained in standing position facing the king. There they read at great length from scrolls. The balance of the group maintained silent and respectful attitude.

"Zama tells me," explained Doctor Benson, "that there are only two forms of religious creeds that he permits to exist. Note the cynical gleam in Zama's eye. He evidently hasn't much respect for these canting zealots."

Joan forced her eyes from the loathsome pool and watched the ceremony of the religious devotees.

The two leaders who had been reading from their scrolls now paused and held aloft a large, black tortoise shell.

This they passed around with painful pomp among the worshipful ones, who each in turn buried his face therein and made a long, loud, snuffing sound as if scenting the contents.

"The king says that these people represent the creed opposed to the scientists. There are two classes of religious fanatics. One group comprises the scientists, who deal in chemistry and have a slight knowledge of the composition of matter, and believe in drugs and conduct scientific experiments. In other words, they are the materialists. This group before us is a meeting of the anti-scientists. This creed, according to Zama, smugly denies the material existence of things. Evidently Zama tolerate both factions, that are constantly at war with each other."

Then, in spite of their weird surroundings, Doctor Benson chuckled.

"The king tells me that the bowl they are passing around among the zealots is filled with corrupt matter. This is part of their strange ritual. Each devotee is permitted to sniff at the contents of the bowl and loudly proclaim that there is no odor. Should the unfortunate zealot admit to the presence of the very evident odor, then he is not in a fit state, mentally or spiritually, to deny the materiality of things. Then he is at once cast to the eels. The king is quite a philosopher and in many ways a very smart man. He says these people will not take any medicine when they are sick, nor will they use any hygienic measures. As a result they are fast dying off. So the king quite philosophically tells me in a couple of hundred years more, they will have ceased to exist by reason of their unsanitary and impractical methods. In the meantime he very wisely tolerates them."

"How strange and weird!" gasped Joane.

"I don't think so," observed Doctor

Benson. "Only a few years ago, the civilized world had a fanatical creed that grew very powerful. They claimed, as do these poor, misguided wretches, that materiality does not exist—that matter was but an error of finite mind. They denied material things, and worst of all, they denied need and poverty. They hoarded money, became greedily selfish. By denying themselves all the wonderful knowledge of chemistry, surgery and true science, they began to die and lose their following. The government in its wrath finally seized their hoarded billions and divided their ill-gotten gains among the poor, whose needs they had so eagerly denied."

"I hadn't thought of it in that way," murmured Joane.

"They are disbanding now. Zama tells me they have worked themselves up into a proper mental frenzy. They have convinced their own foolish minds that material things do not exist; that all is mind. However, they have a very wholesome fear of the voracious eels. It has always been thus," sighed the scientist. "Religions that deal with the incomprehensible, with the cruel and mysterious, the involved ritual, the dogmatic, have always interested the weaker minds. Wait. The king says we are going back to the banquet room. It's time to feast again."

"Ask him to have the frightful eel at the foot of the throne go into the water before we descend," begged Joane. "I'm afraid of it."

Doctor Benson spoke to the king, who was ordering the religious fanatics about their duties with a few terse words of instruction.

Then the three were given a substantial evidence that Zama held a mental control over his astonishing bodyguards, for the eel coiled at the foot of the throne slid into the water without a sound.

Again King Zama courteously assisted Joane from the throne and up on the back of the turtle, the two men mounted, and all were transported safely and quickly over the pool and started across the immense room. This time Calvert stood a bit to the rear of the king, and his fingers nervously fingered his Colt 45, as he frowningly observed that King Zama did not remove his arm from Joane's shoulder.

Joane bore up with a fine effort and tried not to show her repulsion. Zama looked at her with lustful desire gleaming from his evil eyes.

As they moved swiftly and smoothly along, Calvert's eyes were fastened on the back of Zama's head.

An implacable look of fierce determination had crept into the intrepid flyer's face, and the sinewy hands clutching his heavy automatic revolver showed tense, whitened knuckles.

CHAPTER XIV

Zama Laughs

AT the urgent request for Calvert, the politic Doctor Benson shrewdly arranged to gain a brief respite from King Zama's company. The old scientist managed to convey to the ruler of the underworld quite diplomatically that they wished to be alone. King Zama, with his eyes feasting lustfully on Joane, somewhat reluctantly gave the necessary orders that permitted the three adventurers to retire to their room.

Alone, they arranged themselves comfortably to gain as much physical rest as possible and began to discuss their situation. Calvert, whose valor was more physical than mental, and who always escaped from precarious positions with sudden, crashing action, was a bit nonplused. Instinctively he relied a great deal on the brilliant reasoning of Doctor Benson.

For a considerable time the old scientist sat silent. His keen mind was analyzing the problem of escape to the outer world. After a bit he spoke in a far away voice.

"Of course, Calvert and Joane, there's a bare possibility some of these underground caverns might lead to either mainland. That doesn't seem probable, however, or the Atlanteans would have discovered them hundreds of years before this. I will try to wheedle out of King Zama the location of these underground galleries. The king is a clever scoundrel, and I must be very careful not to arouse his suspicions. I am very much worried about his attitude towards Joane. There are a thousand questions I would like to ask the king about these Atlanteans, their habits, customs and traditions, but I'm trying to give him the impression that we are deities, that we know all and see all. Therefore I have to get my information as he whimsically cares to impart it. There's one hope lingering in my mind. King Zama told me he was going to take us for a visit to the workshops of the Scientists. I have an instinctive feeling that if these Scientists have progressed far enough, we might devise a mechanical apparatus to rise to the surface of the ocean through the water itself. I have considered every possibility. That seems to be our only practical way of escape. Zama told me he is fearing a revolt of his subjects, says there has been an undercurrent of mutiny owing to a new, weird, religious cult that is growing rapidly among his subjects. This fantastic creed makes a deity of the octopus, and the followers are seeking to overthrow Zama and effect a pilgrimage of the entire population into the lower regions. Zama says they have not brains enough to realize that they would be overcome by the octopus race. Evidently we have entered the kingdom of the

lost Atlanteans at a very critical time."

"It doesn't seem reasonable," protested Joane. "The stupid faces of the soldiers and of the king's counsellors show no emotions."

"I'm not so sure," disagreed Doctor Benson. "I've caught a keen, intelligent gleam in the eyes of several of them. Possibly behind their horrible, fish-like faces are concealed clever, scheming brains. At any rate, this whole race of Atlanteans, according to the king, is a seething volcano. Zama asked me if we would use our powers to help him in case of a revolt. He says the people are discontented because of his interference with their religious beliefs and system of fines. Zama is a shrewd old politician, but apparently he must go the way of all politicians, since the history of the world. By the way, I've found that gold is their medium of monetary exchange. Apparently gold is rare in about the same proportions as on the surface of the earth. They have diamonds, rubies and precious stones in great abundance, and while they appreciate the beauty of these valuable gems, they don't consider that they have any value except for ornamental purposes."

"The people are little more than beasts," stated Calvert.

"Quite true," agreed Doctor Benson. "Fate and evolution have been very unkind to the ancient Atlanteans. Theirs was a great civilization, advanced in the arts and sciences. Then the great catastrophe of submergence came. Of course many thousands of the original Atlanteans escaped to the mainlands of Europe and the Americas, to become the various races on those continents. The greater portion of Atlanteans, however, were submerged, and the greater part of these were drowned like rats in a trap. Think of the struggles of those remaining few, far below the surface of the mighty ocean, living in these cav-

erns like gophers and rodents. Consider the terrible handicap of being deprived of the light of the stars, moon and sun—the benefit of things that grow. Think how they have lived for ages like animals, preyed upon by the mighty octopods. Why, my friends, their struggle is a pathetic epic of heroism and fortitude. They have advanced but slightly since their retrogression, but that slight advantage gained in the face of the seemingly insurmountable difficulties is a grand and mighty thing. They are a doomed race. The terrific handicap of living forever underground will defeat them eventually. Without doubt their struggles to gain their present status have taken the lives of their finest people, even as the wars of our civilized world have done for us. Conflict of humans to rise higher than their existing conditions means sacrifice—blood letting of the best. I am profoundly impressed with the struggle this race has suffered. It is written in the oldest manuscripts that they are doomed to perish, and I have the feeling that we are about to witness the last chapter of a once proud and mighty race."

"Our next move," mused Calvert, ever ready for action, "is to get to the workshops of the Scientists," as Zama calls them."

As if in answer to Calvert's spoken thoughts, two Atlanteans entered the room. They bowed low and indicated by gestures that the three were to follow. This time the adventurers were met with a surprise, for upon opening the door of their apartment and stepping into the corridor, they were amazed to find Zama standing proudly at the threshold. His bizarre steed was not in evidence.

Behind Zama stood a file of armed soldiers. This indicated that while Zama had no fear of his three visitors, yet he was a prudent and cautious ruler.

Perhaps it was, however, that he feared some of his subjects the more.

Zama greeted Doctor Benson and Calvert with a brief grunt of welcome, but was most loquacious and attentive in his demeanor towards Joane. No question now but that the amorous instincts of Zama had been aroused by the beautiful girl. The imperious ruler clasped her arm with a caressing movement and started down the long corridor. Calvert's breath drew in with a sharp, hissing sound, and he started towards the king with tensed muscles. The watchful Doctor Benson, however, placed a restraining hand upon Calvert's arm with a warning word.

"Hold fast, old chap. Don't make any mistakes."

Calvert subsided, his face was pale; eyes gleaming with implacable purpose. The brave adventurer would have killed Zama, as he would have crushed a rattlesnake.

Doctor Benson skillfully managed to retard their steps so that they fell a short distance to the rear of Zama, who was all eyes and ears for Joane.

"For God's sake, Calvert, keep control of your temper. I know how you feel, old man. Zama has fallen in love with Joane. If he tries to take her, we'll shoot it out with them and save a bullet for each one of us."

Calvert clasped the hand of Doctor Benson with eloquent answer.

"Thanks, Doctor Benson. I'll watch myself, but I think you had better tell the scoundrel to keep his dirty hands from Joane."

"Wait a while," urged Doctor Benson. "We must see the workshop of the Scientists."

Then without raising his voice Doctor Benson addressed himself to Joane as though he were talking to Calvert.

"Keep your courage up, my girl. Calvert and I are watching. Don't let him

see you loathe him, for we must get more information."

Joane did not betray in the slightest that she caught the message, but Calvert and Doctor Benson knew she heard, for her step suddenly became more firm, her bearing more confident.

The group traversed quite a distance of various passageways that seemed to wind without any definite plan.

Still talking volubly to Joane, as though she could understand his croaking tones, Zama guided the group into a large cavern that filled the three adventurers with profound astonishment. It was the workshop of the Scientists!

As far as the eye could reach the mighty cavern was filled with whirling machinery and laboratory equipment. The immense room echoed and vibrated with the sound of crashing gears and whirring wheels. Doctor Benson's face lighted up with a great hope.

Hundreds of workmen in the cavern were laboring at the different devices and experimenting at work benches and laboratory devices. Zama hurried them along too swiftly to give proper time for analysis of each device. Doctor Benson's keen eyes had been observing the machinery and he was listening carefully to Zama's harangue. A great light was dawning upon the clever scientist.

"Great Cosmos!" he breathed, softly drawing Calvert close. "Zama doesn't know what it's all about. Evidently these Scientists have kept much information from their king. Perhaps here is where his threatened revolt is hatching. These devices are highly intricate machines to cook and prepare food and to tan the leather they make from fish skins. These Scientists are smarter than the king knows. They have deliberately taken the most simple process and purposely involved it to appear as a complex process. Cogent minds, capable of

developing such complex and unnecessary processes, must know how to get the same effect with a primary process. I tell you, Calvert, we are going to stumble into something yet."

When the king passed a group of the scientists at work, they would dash about in a frenzied manner and make adjustments on the machines they were operating.

"Don't you see, Calvert?" whispered Doctor Benson, "these people are the brains of the Atlanteans. They are fooling the king, and this hocus-pocus business is intended for the king's benefit. Wait. The king is speaking to me."

From the monarch's sudden tense and excited manner, the three knew he was about to disclose some very interesting exhibit. Turning quickly to the right through a narrow aisle lined on each side with whirling, busy machinery, Zama guided his guests to a large metal door. At some mysterious signal not observed by any of the three, the great door slid upward. Zama stepped inside and beckoned his guests to follow.

The king began laughing, insanely and throatily. Evidently he expected his guests to enjoy some humorous sight.

The room itself was small as compared to the others and was equipped with machinery of a more advanced and intricate type. Part of the room was equipped as a splendid laboratory.

DOCTOR Benson and Calvert looked about with great interest. They observed there were only three Atlanteans in the room and that they appeared to be of a more intelligent type than any thus far encountered.

King Zama looked expectantly towards the rear of the room. A smaller door opened, and a withered, bent figure entered. For a moment Doctor Benson, Joane and Calvert were speechless. The

figure approaching had strangely intelligent features; it was that of an old man—incredibly old. The face was heavily covered by a white beard. The bent figure stooped as from some Sisyphean toil, and the passage of uncounted years.

"Great Cosmos!" from Doctor Benson. "This old fellow has intelligence."

"Look, Doctor Benson!" shouted Calvert. "They are making some sort of a depth globe like ours."

The three gazed in surprised wonder at the sight of a huge steel ball in the center of the room. Surprises came thick and fast, for King Zama was dancing about excitedly, laughing with insane guffaws and screaming with amusement.

The withered human who had entered gazed at the three adventurers with unspeakable amazement depicted on his face. He spoke no word; just gazed and stared incredulously.

"Wait!" snapped Doctor Benson. "Zama is having an uncontrollable fit of amusement. He says this old man is Tantis. Zama tells me between his bursts of mirth that Tantis is crazy, that he has been building a device to reach the outer world. Zama thinks the outer world is all water, and it excites his risibilities to think of Tantis laboring to reach the surface. Zama, in spite of his ignorance, has a certain, shrewd philosophy. He has permitted Tantis to labor at this device for years. I've got it!" hissed Doctor Benson. "Fall into Zama's mood. Laugh and shout as if greatly amused. Remember, Zama doesn't know we are from the outer world. He thinks we are some sort of gods. Perhaps we can get a talk with this Tantis. Maybe his steel globe will take us to the surface. It's our chance. Now listen carefully. You, Joane and Calvert, must be great actors. Rush up to the globe. Laugh and shout as if

convulsed with amusement. I will maneuver to get close to Tantis and try and get a few words with him!"

Joane and Calvert, fired with hope, executed a clever bit of acting. They danced about the highly amused Zama. They pointed at the depth globe, imitating the king. Calvert gave out great shouts of laughter, and Joane fairly screamed with simulated mirth. King Zama was pleased at their appreciation of what he considered to be a highly humorous situation. Joane and Calvert cleverly managed to maneuver the king to the other side of the globe. Calvert, though yearning desperately, did not attempt to inspect the great ball of steel. He must keep the king amused.

This afforded Doctor Benson a welcome opportunity. He hastily approached Tantis. By some incredible intuition, he knew that the withered body of the aged man before him held an erudite brain.

"We are friends," shot out Doctor Benson, in tense, Atlantean words. "We are from the surface of the earth. We want to escape with you."

An unbelieving but hopeful gleam crept into the eyes of the aged Atlantean. He began to tremble violently and fell to his knees and clutched the feet of Doctor Benson.

"By the great Gods of the Sun and Moon! A human with intelligence! I am Tantis, last of a long line of ancient Atlantean scientists. I know the truth about the upper world. For many years I have planned and built this device to escape to the outer world. The cruel Zama is amused at what he thinks is a foolish experiment. He doesn't suspect."

"Speak quickly," interrupted Doctor Benson. "My two comrades are tricking Zama. They are feigning amusement. They are keeping him on the other side of your globe. Do not excite his suspicions. We three will return.

We will escape with you. Be of good heart."

"Say no more," breathed the ancient Tantis. "I will feign a fit, a scream and frothe at you. In ten hours, come to this room. We shall be ready to go."

"But how?" urged the irrepressible Doctor Benson, anxious for information in spite of the dangerous situation.

"Don't speak now," hissed Tantis. "Only return. I shall need your help. Above this room I have constructed after a hundred years of labor and unknown to the king a long shaft connecting to locks that lead into the ocean. The huge globe contained compressed air. It will shoot us to the surface."

"Great Cosmos!" breathed Doctor Benson. "Play your part, Tantis. We three shall return in exactly ten hours."

For a prief instant the two clasped hands—the ancient pledge of mankind. Tears suddenly streamed from the sunken and dark eyes of Tantis. Then they heard the laughter of Zama, Calvert and Joane approaching!

Tantis became a raving madman. He screamed, frothed and puled forth curses, striking out at Doctor Benson as though he would tear him to pieces.

Doctor Benson retreated, laughing uproariously as he turned to King Zama.

"My dear king, you have given your three humble visitors a great treat. Never before in our visits to the different worlds," Benson stated this quite importantly, "have we seen such an interesting madman. Why don't you let him try and get to the outer world with his crazy device? Doesn't the poor fellow know how the fearful water pressure will crush his globe like an egg-shell?"

"Is that so?" laughed King Zama. "You say the pressure will crush it? How interesting. Well, let the poor fool go. I'd hate to destroy him after his years of labor. He is harmless. I want

to show you other wonders of Atlantis."

For once the king allowed himself to separate a bit from the side of Joane as he led them out again through the metal door, that immediately closed behind them. Doctor Benson was desperately anxious to get his comrades alone in their own room, where they could plan to keep the all important rendezvous with Tantis.

Fortune favored the three adventurers, for at that moment a messenger darted up and began to talk excitably to King Zama.

"What is he saying, Doctor Benson?" asked Calvert.

"Some problem of great import has developed regarding the government, and he's asking Zama to return at once to his throne room. His soldiers have captured some conspirators against the throne. Well, I guess the eels will feed again!"

Zama turned to Doctor Benson and explained in a few words that a matter of great importance required his immediate attention. He detailed a guide to escort the three to their room, and Zama left quite hurriedly.

CHAPTER XV

Desperate Plans

DOCTOR BENSON managed to control his impatience till the three were safe again in their private room. The Atlantean escort detailed to them had apparently been instructed to be certain the three visitors were returned promptly to their quarters.

Directly the Atlantean guards had departed, Doctor Benson began speaking to his comrades. In a few terse words he told them of his conversation with Tantis. Joane and Calvert eagerly absorbed all the welcome information.

"And I tell you," finished Doctor

Benson, "I'm certain Tantis knows what he is doing. At any rate, it is our only chance. I have made a careful note of the time. In exactly nine hours we must in some manner reach the workshop of Tantis, even if we have to fight our way through. It's certain that King Zama means harm to Joane."

"But do you think the device of Tantis will work?" asked Joane.

"Of course I had no time to check his plans," stated Doctor Benson, "but Tantis has a brilliant mind, and I'm sure he has provided for every detail in the construction of his device. At any rate it's our only hope."

"That's right," agreed Calvert, "we have no choice in the matter." Then added with his usual impetuosity, "Is it settled that we try to escape with Tantis in his depth globe?"

As usual the three looked intently at each other, and as if actuated by one mechanism their heads nodded in unison. Impulsively they clasped hands for a moment.

"I don't see how we can go further with our plans at the present moment," said Doctor Benson, seating himself comfortably among the soft robes. "Let's lie back and relax. At thirty minutes before the ten hours is up, we'll start for the workshop of Tantis. Calvert, will you inspect every gun and make a count of our remaining ammunition?"

The suggestion of Doctor Benson's was superfluous, for already the agile, strong fingers of Calvert were cleaning, inspecting and loading the revolvers.

"Forty-eight cartridges," commented Calvert in a tense tone. "Here, Joane, I'm leaving three in this clip, which I will put in your jacket pocket. You know what these three cartridges are for."

"Yes, Don, I know."

"That leaves fifteen rounds each,

which I'm distributing, and let's make every bullet count if we have to shoot our way through."

"Now, Calvert," remonstrated Doctor Benson, "let's not resort to shooting unless it's absolutely necessary."

"Agreed," snapped Calvert. "You're the leader, Doctor Benson. That is best."

"Come now, my children," ordered Doctor Benson in a sudden parental tone, "let's rest."

But Calvert could not relax.

"How are we going to get through the door? Wait, perhaps it isn't locked."

"I have considered that," answered Doctor Benson. "The door is locked. I distinctly heard the bolt click when our escort left us, but try it to be sure."

Calvert crossed the polished floor and gave a great tug at the handle of the door. It was securely locked!

"That's another problem for us," began Calvert. "We——"

"Don't worry about that for a while, my boy," urged Doctor Benson. "I beg of you to get some rest. Some of the Atlanteans will bring us food, I am sure, before the ten hours are up. When they come in, we'll overpower them and keep the door unlocked until the hour for action."

Calvert could find no further argument at the moment and lay back with an attempt to gain a bit of rest. After a few restless movements, however, he moved a group of the soft coverlets near the door. In a moment Joane rose and relaxed at Calvert's side. She stirred like a tired kitten. Calvert reached over and caressed her shoulder. Her restless movements quieted.

For at least three hours Calvert sat comparatively quiet. Joane had not spoken, although her eyes were wide open. Their glances conveyed more

eloquent messages than words. Finally Calvert could stand the inactivity no longer.

"Joane," he muttered in an amazed tone, "what do you think? Doctor Benson is sound asleep. I wish I had his nerve."

"No one has your nerve or courage," replied Joane, adoration in her eyes.

In another hour the Swedish scientist woke. After an extravagant yawn, he asked, "Did you two obtain any rest?"

They were given no opportunity to reply, for at that moment they heard outside hands actuating the bolt on the door. All three sprang to their feet.

"Wait now, Calvert," ordered Doctor Benson. "Don't try to attack those who come in unless there are only three or four. Maneuver in back of them as they enter and shut the doors, so that any struggle will not be heard in the corridor."

The door opened, and the three tense adventurers started back in amazement. Their plan had gone amiss!

Standing outside the door was King Zama with an escort of soldiers.

"Hold fast, Calvert," warned Doctor Benson. "Let's find out what the king wants."

Zama spoke rapidly in guttural Atlantean, which was translated by Doctor Benson.

"King Zama wants us to come to the throne room with him to witness some special ceremony. I think it best we go. We have five hours yet before the hour set by Tantis."

King Zama fairly smothered Joane with amorous attentions as they proceeded towards the banquet hall. In that immense, glittering room the three friends were soon seated at the table, upon which were piled innumerable dishes of food.

"Evidently it is some special occa-

sion," said Calvert as the three seated themselves.

"I don't like the looks of this," whispered Doctor Benson. "King Zama has evil in his eye."

King Zama seated himself with great pomp and ceremony at the end of the table. There he reposed like some evil monster, seated on a throne-like chair high above the rest. An obsequious attendant handed Zama a tortoise-shell of food.

"The king says it's a great honor for him to feast with his guests. He says we are going to the throne with him, where he will make an important announcement of interest to us. Listen, Calvert," finished Doctor Benson in a whisper, "this devil means harm to Joane. He can barely take his eyes from her. He's lost his head completely. We're going to have trouble."

"I'm ready," hissed Calvert.

The three forced themselves to eat, not wishing to offend the watchful Zama. When they sat back Zama arose and motioned for his three guests to follow. The mammoth turtle was waiting at the edge of the moat and at Zama's imperious bidding, all four were soon safely mounted.

Again the turtle smoothly swam across the moat to deposit his passengers at the foot of the ornate throne. The immense eels seemed to awake from their lethargy as the turtle plowed through the water, and again the waters boiled and seethed from the threshing bodies of the hideous reptiles.

When they had climbed to the throne, Calvert strategically took a position at the rear of the king. After showing a fawning and solicitous consideration for Joane's comfort, King Zama rose pompously to face a large group of his subjects gathered at the banquet table. He began a loud harangue. For at least an hour he went on, shouting and ges-

ticulating wildly. It was an ordeal for Joane and Calvert, who could not understand a word.

"What's he saying?" whispered Calvert.

"Nothing important, or of interest to us as yet," answered Doctor Benson sotto-voice. "It's mostly a political speech. He's threatening them with horrible punishments should he catch any plotters against the throne. Just a political speech. Wait! He's telling them now that after a sacrifice to the eels, he will make an important announcement."

At that moment two soldiers dragged a trembling, shrieking wretch to the edge of the pool.

"It's Atla!" screamed Joane, "Atla! Where has he been? What are they going to do with him?"

The king paused in his harangue to look curiously at Joane when she had shrieked out.

"We must save him," begged Joane. "They're going to throw him to the eels. He saved us from the lower regions. Can't we help him?"

DOCTOR BENSON suddenly lost his pacifist attitude. His fine old figure straightened as he glared into the eyes of King Zama. Joane and Calvert did not understand what Doctor Benson was saying, but they knew that the brave Swedish scholar was interceding for Atla in no gentle manner.

King Zama was amazed, his dignity outraged, by the temerity of his visitor.

"Look here, King Zama," snapped Doctor Benson in clear-cut Atlantean words, "what are you going to do to that poor chap? He is our friend."

"I am going to have him sacrificed to the eels. Let no man dispute the word of Zama."

"But what has he done? Has he com-

mitted a crime?" argued Doctor Benson, fighting for the life of Atla.

"It is written," snarled Zama, "that no being of the lower regions can visit our kingdom. Death is the penalty. He must die. I have spoken."

Calvert stepped forward, automatic in hand, but Doctor Benson, with that rare presence of mind that had carried him through so many adventures, quieted Calvert with a gesture. Zama started to raise his hand. The three knew it was the signal for the victim to be cast to the eels.

Doctor Benson hesitated. He had a mighty problem to solve. Should the three risk their chances of escape to protect the life of the wretched half-human, half-animal, that stood quivering and trembling at the edge of the pool? Was the life of such a creature worth the sacrifice?

His two companions sensed his thoughts. They nodded simply and humanly. It helped Doctor Benson decide.

"Wait, King Zama!" he shouted in a commanding voice. "We are gods! We forbid this sacrifice. If he is cast to the eels, you shall die." There was a ring of sincerity in the Swedish scientist's voice that made even the cruel and haughty Zama hesitate. The ignorant always have a mighty fear of the unknown.

"And if you interfere," snapped King Zama, "I shall have you thrown to the eels."

Doctor Benson's eyes fairly gleamed fire as they glared straight into the eyes of the infuriated king.

"Very well, Zama, but first let me show you our power. The man from the lower levels shall not be sacrificed. Behold the two soldiers who are holding Atla. I shall point my finger at them and both will drop dead."

King Zama hesitated. His primitive

mind understood this sort of talk. Then his insane desire for power overcame his judgment.

"Show me your power," he snarled. "Strike down my two soldiers by pointing your finger and I will believe."

"Very well, Zama. You have decided."

With an incredibly quick motion that could scarcely be followed by the eye, Doctor Benson whipped up his right arm. His heavy forty-five automatic thundered twice.

The two soldiers holding the whimpering Atla fell inertly to the floor!

It was a splendid exhibition of marksmanship and spoke well for Doctor Benson's steady nerve and confidence. Had he missed either one of the soldiers, the result would have been fatal.

King Zama was astounded. He stuttered and sputtered with rage, as a nameless fear crept into his heart. What manner of gods were these who could blast out life simply by pointing a finger? Finally the politician in King Zama came to his rescue.

"Very well, my great gods. The man from the lower regions may live."

Doctor Benson was quick to follow the advantage gained.

"And now, King Zama, we wish to go to our quarters very soon. The maiden who accompanies us is tired."

King Zama turned to Joane with a cruel expression of desire on his face.

"First, my friends," he began unctuously, "I want to make an announcement that concerns the maiden."

"And what is that announcement?" demanded Doctor Benson, a dread creeping into his bold heart.

"I have decided to do the maiden a great honor," continued King Zama, now more sure of himself. "I am going to take her to wife."

For a moment Doctor Benson did not speak. He glanced at Calvert, who was

vainly trying to understand the words. It was well that the heroic flyer did not understand.

"But gods do not mate with kings," laughed Doctor Benson, as if enjoying a great joke. "The maiden is not of this world. She doesn't desire to wed with you. She is already wed to another."

With that Doctor Benson pointed dramatically at Calvert.

"Then I will slay that one!" shouted King Zama. "That is the law of Atlantis. It is so written. Any man desiring the woman of another can challenge him to combat, the survivor taking the woman. Even though you are gods, you must abide by the law."

Doctor Benson considered this for some time, but held his defiant attitude uncompromisingly. He must deal cautiously with this cruel ruler. Suddenly it came to him. He had great confidence in the mighty strength and fighting skill of Calvert. Perhaps the combat would be the best way out of the situation.

The king was growing impatient. Doctor Benson knew he must decide quickly. If they should slay the king on the spot, they would be at the mercy of the soldiers. The learned scientist played a great rôle as an actor when he turned to Calvert and spoke to him about some matters not concerning the issue at hand. Then he turned to King Zama sneeringly.

"We have decided, Zama. Calvert will meet you in combat for the hand of the woman. You must announce it at once to your people. If you survive, you are to take the woman. If Calvert defeats you, we are to depart in peace with the woman."

"Agreed," shouted King Zama, a treacherous gleam in his eyes.

Then in a loud, ringing voice he explained the terms of the combat to the roomful of soldiers and counsellors, who

began to mill about hastily and struggle for places of vantage. Evidently they had often witnessed such combats. The shivering Atla had darted under the table.

With a prayer in his eyes, Doctor Benson turned to Calvert and Joane. In a few terse sentences he explained what had happened—the desperate situation, how he had made the choice for Calvert, feeling that it was the best thing for all.

"And Calvert, you know I would myself meet him in combat except I know your youth and strength better fits you."

"Say no more, old man," snarled Calvert. "It will give me pleasure to meet King Zama in combat, and I'm going to kill him with my bare hands. Try and arrange the terms of the combat that we meet with no weapons."

Joane did not plead for Calvert to abandon the idea. She knew they were in a desperate plight and that the judgment of Doctor Benson and Calvert was best.

Doctor Benson turned to Zama, who was chattering volubly, and leaned forward so that his bearded face almost brushed the cruel countenance of the king.

"Calvert wishes to meet you with bare hands, without weapons," taunted the scientist. "Do you dare, King Zama?"

"Why do you ask that?" demanded Zama in a surprised tone. "The terms of the combat are written. I shall meet the god Calvert on the back of the turtle, that will swim out into the middle of the moat. There we will struggle without weapons, and the loser shall be flung by the winner to the eels."

It required an effort on the part of Doctor Benson not to show his horror at such a duel, but in a calm, steady voice he imparted the information to Calvert.

"Oh, Don," breathed Joane tremulously, "you are sure you can best him?"

"Yes, my dear," laughed Calvert eagerly. "And this day King Zama will feed his eels with his own carcass."

CHAPTER XVI

A Strange Duel

CALVERT, a born gladiator, shrewdly inspected the figure of King Zama as the cruel ruler clambered down the throne to the back of the turtle. He observed that the king possessed very long arms and a great, swelling torso of superb muscular development. For an athlete of such size the king possessed a rather slender neck. This Calvert observed with great interest. He realized the king out-weighed him by at least fifty or sixty pounds, but the dauntless flyer had great confidence in his own fine strength and trained muscles. Long since he had mastered the art of wrestling.

Doctor Benson seemed to read his thoughts.

"Wrestling, Calvert, is an old art," warned the scientist. "Boxing would be new to King Zama. Watch him, my boy, and don't let him wind those terrific, long arms about your body. That evil, receding chin looks weak. Try a few stiff punches at his protruding eyes and watch for treachery."

By this time Zama had mounted the turtle and motioned for the others to follow.

"He says," interpreted Doctor Benson, "that we are all to ride on the turtle to the other side. There Joane and I are to dismount, the turtle will swim to the center of the moat and at a signal, which the king has agreed will be given by me, you are to begin struggling to throw the other into the water. I believe the king has often had similar combats. I've got it!" whispered the

doctor; "King Zama has some mental control over the eels. He means to leap from the turtle and drag you with him. The eels would instantly tear you to pieces, and Zama will swim to safety unharmed. I believe, Calvert, that's his scheme. He seems too sure of himself."

"I've thought of that," snarled Calvert in a vicious tone. "When Zama strikes the water he will be dead."

"I know you're going to win, my boy."

Joane gave Calvert's hand a quick pressure.

"For me, Don," she breathed. Her voice was firm and hopeful. Calvert spoke no word.

"Wait, King Zama," snapped Doctor Benson, "give me your sword."

Without a word the proud monarch handed over his bronzed blade to join the forty-five automatic relinquished by Calvert.

Obedying some signal, the turtle swam slowly into the center of the moat. The vicious eels in the water seemed to sense the impending duel, and that they would be fed. As the turtle moved along, they fairly slithered and rolled in ecstasy, half-way up the sides of the turtle's back.

Calvert kept a watchful eye on the movements of Zama. The clever flyer stepped about on the back of the turtle, feeling with his feet. He knew his success depended upon his ability to keep his foothold.

Zama stood up proudly and erect with his mighty breast swelled to its fullest extent. He seemed smugly confident.

When the turtle had reached the center of the horrible pool of twisting, writhing monsters, it stopped. Calvert and King Zama glanced towards the brink.

"I'm ready," stated Calvert, watching Zama from the corner of his eye.

With the sigh of a man who feels the gallows scaffold under his feet; Doc-

tor Benson uttered a loud shout. Instantly Zama hurled his heavy, strong body at Calvert's knees. With an agile leap high in the air, Calvert easily avoided the plunging figure, and it was only with a mighty effort that Zama prevented his body from plunging into the water. With a hasty scramble he was on his feet and faced Calvert a little more cautiously. He had learned a bitter lesson.

"Doctor Benson was right," muttered Calvert. "He means to plunge into the pool and carry me with him. He doesn't fear the eels."

It seemed as if the vicious, deadly giant eels were conspiring to help their master, for they became bolder in their convolutions. Several of them raced slitheringly across the top of the turtle's back, causing it to become slippery. Calvert concentrated every nerve, every energy. He gave no heed to the eels that floundered below his feet. He felt that they would not touch him. Placing each foot down with infinite caution, Calvert began to advance towards Zama, who had now recovered his balance. Once again the heavy body of the king plunged forward, as a football player tackling. This time Calvert did not leap into the air. He stepped forward and swung with a vicious snap his good right arm. Crack! His hard fist met the face of King Zama. Zama was flung back in mid-air, as a man dashing into an invisible wall. The back of his head struck the hard shell of the turtle with a loud snap, and this time Zama clambered to his feet painfully and slowly. There was fear in the cruel king's eyes. He realized he was pitted against a skilled and dangerous opponent.

Cautiously Calvert advanced, but a most unfortunate thing occurred. One of the large eels at his feet slashed its tail around in a vicious swoop, strik-

ing Calvert below the knees. The heavy, sweeping blow came from the rear, and Calvert was swept from his feet to fall sprawling and clutching to prevent falling into the water.

With a triumphant shout Zama leaped on Calvert and began to drag him down the slope of the turtle's back. Several of the eels rose from the water and caressed Zama affectionately. They were trying to assist their master.

Joane uttered a piercing scream of terror.

"Calvert is down! Calvert is down!"

"Hold fast, daughter," mumbled Doctor Benson. "Calvert is a great fighter and a wonderful athlete."

Mouthing strange curses King Zama pulled desperately to drag Calvert into the seething water. Summoning all his vast strength and calling upon the resources of his trained mind, Calvert for the moment allowed Zama to drag him a short distance. He was maneuvering his legs quickly and surely for a body scissors around the king's protruding stomach. Like a steel trap Calvert's legs began to tighten inexorably. Suddenly King Zama gave out a gasp as his very vitals were pressed together. Then inching with desperate and mighty efforts, Calvert dragged the heavy body of the king until he was on the very apex of the turtle's rounded back.

"Calvert's got him!" shouted Doctor Benson in great relief.

Slowly and surely Calvert's strong right arm crept around under the neck of the now gasping ruler. Then the flyer's left arm slipped under the ruler's bruised chin.

"A back headlock!" yelled Doctor Benson, now leaping excitedly about.

HOLDING the king securely, Calvert waited a bit to fill his tortured lungs with air. After a few great breaths, he tensed his strong mus-

cles and forced the king's head backward, all the while holding the vise of his legs tighter and tighter. The king gurgled and tried to call out, but his neck was being bent and his head pulled further and further back. Then suddenly Calvert drew in a hissing breath and retained it as his rigid body tensed with a splendid effort.

Snap! and King Bama's head lay back limply. The king was dead, his neck broken!

Calvert rose to his feet, trembling from the terrific strain of his recent effort. With heaving chest he turned proudly to gaze at Joane and Doctor Benson. Then quickly he snapped up the inert body of King Zama and with an effort that Hercules would have envied, he swung the sodden body aloft. As a spring uncoiling he cast the body of King Zama far into the loathsome pool. It struck with a noisy splash that instantly became a volcano of seething, twisting forms. The eels were feasting!

"Don!" screamed Joane, "look, the turtle is sinking!"

Calvert took a hasty glance at the pool. It was true. The turtle was submerging.

Then Calvert did a most courageous thing. He dashed the length of the turtle's back like a trained sprinter and with an agile leap plunged as far as he possibly could towards the shore of the moat, where Doctor Benson and Joane were anxiously waiting. In spite of his fine leap, Calvert struck the water a full fifty feet from safety, but when he struck he utilized the momentum of his leap to take him into a swimmer's racing stroke.

Doctor Benson and Joane darted to the edge of the pool with ready automatics to assist Calvert if possible. By some incredible fortune of fate, Calvert, swimming furiously, reached the edge of the pool safely and jerked him-

self out of the horrible waters. The eels were busy feasting on their erstwhile master.

"Oh, Don!" cried Joane, clasping him in her arms, "you were splendid—wonderful!"

"Look out!" shouted Doctor Benson. "The people are getting restless. They're organizing. Dash for the workshop of Tantis!"

CHAPTER XVII

Phaethon Smiles Again

WITH loud, plaintive cries Atla dashed from under the table and scurried up to Doctor Benson. With monkey-like chattering he tried to show his joy.

"Quick!" shouted Calvert. "We'll fight our way to the workshop of Tantis!"

But already Doctor Benson and Joane had started across the room. The soldiers and the assembled people were very much confused and disconcerted to see their monarch perish at the hands of Calvert.

"Wait!" hissed Doctor Benson. "Don't show that we are in any hurry. Walk as unconcernedly as possible."

It required a great test of their courage to walk slowly across the cavern. The Atlanteans were shouting and milling about excitedly. The soldiers were swiftly organizing into a well formed group. In a few moments the adventurers, crossed the domed cavern and hurried along the narrow passageway that led to the workshop of Tantis.

"Faster!" urged Doctor Benson, trying to quiet the chattering Atla.

Calvert, with his usual bravery, placed himself at the rear of the group. In his strong, right hand he held the bronze sword of the vanquished Zama, in his left the automatic revolver. The soldiers had organized and with excited

shouts were beginning to pursue the four fugitives. With rapid steps the adventurers hastened down the long corridor and entered the room filled with whirring machinery and busy workmen. Doctor Benson made use of his keen intelligence. He shouted loudly to the workers as they dashed along.

"King Zama is dead. Seize the throne! Down with tyranny!"

The awe-stricken workers dropped their tools and began to mill about in the narrow isles. It was Doctor Benson's shrewd strategy to organize the workers against the soldiers.

In a few moments the three intrepid adventurers were at the metal door of the workshop of Tantis.

"We are two hours earlier than the time set by Tantis."

"How can we make him hear us?" asked Calvert.

Doctor Benson, ever efficient, spoke a few guttural words to Alta. The chattering half human immediately went to one end of the door and pulled a small lever that had escaped the notice of the adventurers. They waited impatiently and nervously, but the door did not move.

Then the three beheld an amazing and fearsome sight. A large number of soldiers were approaching at a rapid pace.

"We've got to fight for it," snapped Calvert. "Doctor, you watch Joane while I'll stand the devils off as long as I can."

With that Calvert took from Joane her proffered revolver and stood grimly waiting to meet the advancing soldiers.

Without the slightest compunction Calvert sprayed a clip of forty-five slugs into the advancing mass. Eight Atlantean soldiers were swept down by the unerring fusillade. For a moment the advancing soldiers were disconcerted. The roar of the gun and the death of

their eight comrades was terrifying but bravely they continued on.

With a snarl on his lips Calvert spoke to Doctor Benson.

"Give me your automatic."

The soldiers were now within a hundred feet of Calvert. Coolly and slowly he emptied his clips and with a snapping movement tossed one revolver to Doctor Benson.

"There you are, Doctor Benson," he stated coolly. "There are three cartridges left in that revolver. Save them for the last."

"Wait, Don!" screamed Joane. Apparently Calvert did not hear her.

Swinging the bronze sword of Zama till it fairly whistled, he strode bravely forward to meet the advancing soldiers. Many Atlanteans fell before the hissing, swinging blade wielded by the infuriated Calvert. He was a demon possessed with the strength of a dozen men. The Atlantean soldiers could not stand before his skill and deadly blade. They melted before him like wheat before a mower's scythe.

"What a noble fighter," breathed Doctor Benson with admiration. "What a courageous man your lover is."

"They're closing in around him," screamed Joane. "They'll overpower him."

It was true. Brave Atlanteans were gradually encircling the fighting Calvert.

At Doctor Benson's direction Alta had been steadily pulling the lever at the metal door.

"Oh, Doctor Benson," moaned Joane, "they've surrounded Don! They'll kill him!"

But Calvert, towering above the smaller Atlanteans, swung his deadly blade in vicious, swinging circles. No soldier could stand before him.

Relentlessly and smotheringly the soldier hordes closed in. Calvert with the light of battle in his eyes continued to

strike, parry and thrust. Human eye could barely follow the swift movements of the heavy sword. Just as the soldiers organized and closed in about Calvert, Doctor Benson gave a happy, resounding cry.

"Look, Joane! The scientists and workers are coming! They're going to attack the soldiers!"

A crowd of infuriated workers dashed down the aisle. In their hands they carried heavy tools of various kinds. With animal-like cries they threw themselves like mad furies among the soldiers.

"The revolt of the Atlanteans!" shouted Doctor Benson. "Come here, Calvert."

Gasping for breath, Calvert dashed back to Doctor Benson and Joane.

"Look!" shouted Joane. "The door is opening."

Slowly, the great, metal door slid upward.

"We're here, Tantis!" shouted Doctor Benson, darting under the door and calling for Joane and Calvert to hurry.

The aged Tantis was waiting and hurriedly urged the three adventurers into his workshop. Doctor Benson began immediately to speak with the aged Tantis, who was busy actuating the device that closed the metal door.

"There's a revolt among the people," snapped Doctor Benson. "We had to come earlier than the appointment. Are you ready to escape?"

"I am ready, friends," muttered Tantis. "Come."

The depth globe constructed by Tantis had been moved.

"Where is your device—your depth globe?" asked Doctor Benson anxiously.

"There," pointed Tantis.

The three looked towards an open door. There was built a great elevator shaft. Reposing therein on a steel

cradle was the immense, round ball of steel.

"Into the globe," hissed Tantis. "There's no time to lose." With that the aged and withered scientist gazed questioningly at Atla.

"Atla is our friend," explained Doctor Benson. "May he go with us?"

"Yes," stated Tantis, after considerable thought. "There is room."

IN a few moments they were crowded closely together within the large globe. Tantis remained outside to operate the mechanism of the lift and ascend with it. The three adventurers heard the whirring of gears, and they could feel quite plainly that they were traveling upward.

Minutes passed, and the movement continued. Doctor Benson with his usual, analytical mind closely inspected the inside of the depth globe.

"Astonishingly like ours," he commented, "except, of course, the construction is much lighter to give the ball buoyancy."

After about an hour the grinding, lifting movement ceased, and with an active scramble that belied his years, Tantis clambered into the huge ball.

"My friends," he stated, "we're entering the lock that will admit us to the ocean."

Tantis seated himself at the control board and explained as he moved different levers.

"I have built the locks so that I can operate them from this control board. A series of doors will open, that will admit us to the ocean. Then we will rise to the surface."

Doctor Benson was leaning forward with great interest.

"We are near the top of a great, underwater mountain."

With that Tantis moved a lever. Immediately they felt the globe move and

heard the rushing of water under the fearful pressure. Tantis watched the instrument board before him with anxious eyes.

"We are in the water now, my friends." There was a vibrant, hopeful ring in the aged scientist's voice, "but we are not rising."

"We're not lost yet," explained Tantis. "I considered this possibility. At the top of the globe there is a small propeller shaped like the screw of Archimedes."

"Archimedes! Did you hear that, friends?" breathed Doctor Benson. "Tantis knows about the screw of Archimedes!"

Tantis turned some levers, and a whirring noise sounded from a circular motor-like apparatus at the top of the globe.

"It's an atomic energy motor," explained Tantis. "We are lifting. The screw is revolving. It doesn't require much power to move the globe."

Slowly and steadily the depth gauge indicated they were rising. Three thousand, two thousand and finally one thousand, read the depth indicator. Suddenly the needle of the depth indicator began to gyrate and oscillate wildly.

"The buoyancy of the globe is taking

effect," shouted Doctor Benson. "We are rushing towards the surface like a bubble of air. Hold fast, friends. We will shoot far out of the water and fall back."

They were thrown violently to the floor as the huge globe burst through the surface of the water. Far into the air it shot, to fall back with a great splash. After a cautious wait, Tantis moved a lever that opened a small door in the top of the globe. Calvert was the first to climb through, and he bent down to assist Joane. The two stood arms clasped, gazing worshipfully into the welcome glare of a mid-day sun. The bearded, happy face of Doctor Benson poked through the door at their feet.

"Look!" shouted Calvert joyously, "there is the battleship *California*. They've seen us. They're sending up signals."

Doctor Benson became the inquisitive scientist—always eager for some scientific truth.

"Say, Joane and Calvert, it's mighty strange how Tantis knows about the ancient Archimedes! Tantis, tell me how——"

But Joane and Calvert did not hear. Their thoughts were in the blue and glorious sky.

THE END



“Labyrinth”

By NEIL R. JONES

Our readers will be pleased to get another Jameson story, bringing out the convenience and advantages of purely mechanical bodies which can be mended just like automobiles and can be guided by a brain encased in the conical metal heads. The adventures of Dr. Jameson are as interesting and as exciting as ever.

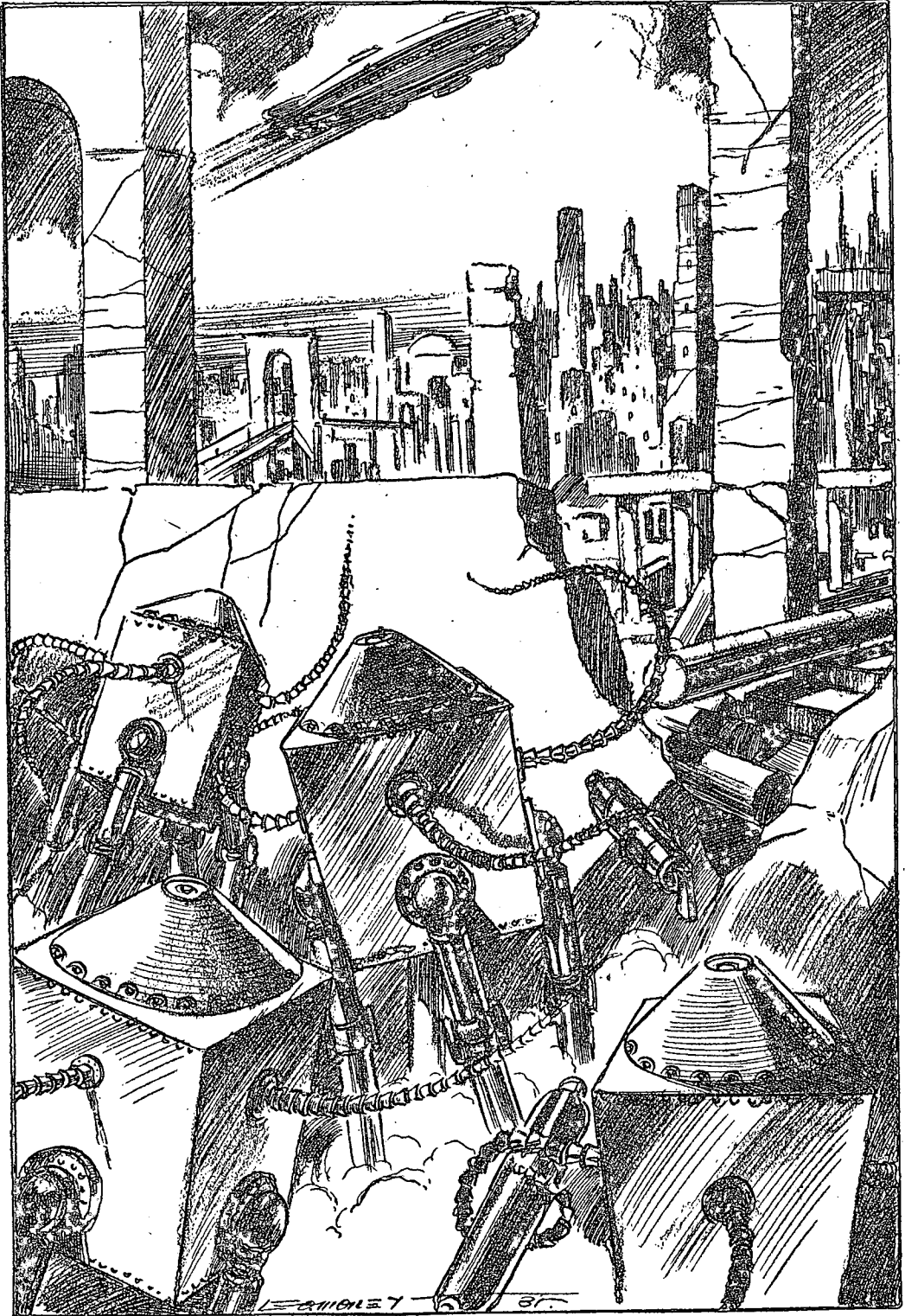
Synopsis of Precedence

DREAMS of the Egyptian Pharaohs and those of Professor Jameson were all practically identical. The divergence from similarity, however, existed more or less in realization. Both sought after immortality of the material body subsequent to the time animation had ceased, an unending physical likeness. The Pharaohs' achievements ran into several thousands of years, the efforts of Professor Jameson running through centuries into many millions of years. Also, the professor's results bordered on perfection of the highest anticipation, much in contrast to the chemical-soaked, scarcely recognizable features of the Egyptian mummies.

But then, the Pharaohs knew nothing of space-rockets. What little science existed in their day ran closer to chemistry. Had there been such contrivances of mechanical design like the professor's space-rocket in that day and age, it is doubtless that Amenhotep, Rameses, Tutankhamen and their contemporaries would have been dissatisfied with the simple design employed by the professor. Their superior magnificence and regal eminence would have demanded nothing less than ornate funeral rockets of chased gold.

Professor Jameson died in 1950. His rocket lay waiting for him, and, carrying out the terms of his will, his nephew, Douglas Jameson, placed the professor's dead body in the rocket and released the lever operating the radium propulsion. Like a silent meteor, the bullet-shaped projectile sped rapidly off the face of the earth through a hemisphere of darkness into the perpetually sun-lit night of the dark, yet glittering cosmos, stabilizer fins guiding it safely to the surface of the atmospheric ocean where its speed became multiplied. Curving into the earth's gravitational field, the rocket, as foreplanned by the professor, became virtually another moon, a tiny satellite. From this point on, the problem of physical preservation became simplified.

No need was there for elaborate and intricately-prepared embalming fluids; no need was there for wrappings, or secret tunnels leading into man-made pyramids of squat, gargantuan proportions, death-traps on every hand and of all conceptions to thwart and wreak vengeance upon the marauding looter. Automatic repulsion rays, excited through proximity, produced a counter attraction to swerve the rocket aside from dangerous meteors.



Do you suppose the city is abandoned? queried 744U-21. Its appearance suggests a lack of life inside its walls.

In the depths of space, the professor's dead body encountered no decay, no disintegration, no change whatever in its cold, frozen state. For forty million years, the rocket satellite kept to its lonely orbit around the dying earth. How much longer it might have continued thus is indeterminable, incalculable.

Space-wanderers from distant Zor, a world of another system found the professor's rocket and recalled his brain to life. More than that, they made him one of them, a Zorome, a machine man, an organic brain in a metal head, its needs supplied chemically, proving that a brain, properly housed and cared for, can do much better freed from the erratic diversions of an organic body.

Long ago, the Zoromes had made themselves like what they had made the professor. Their cone-shaped heads possessed a complete circle of eyes, and a single eye situated in the apex of the metal head to allow vertical vision. Their metal-cubed bodies possessed four metal legs and as many, or often more, tentacles. Professor Jameson developed their mode of telepathic discussion soon after his brain transposition.

On their way back to the planet Zor, they stopped on different worlds of various systems, experiencing many strange and bizarre adventures in which the professor often figured prominently. Back on the planet Zor once more, they found Zor and its sister worlds menaced by a race of creatures from a neighboring system. Space war resulted, and in a long, hectic, dangerous struggle the machine men of Zor and their organic brethren emerged triumphant.

Marooned on a world of the enemy system, Professor Jameson and 6W-438 were later picked up by a ship of

Zor and returned to the home planet of the machine men. Not long after this, another space expedition was fitted out under the supervision of the professor and 744U-21. Once more they embarked upon a long journey into the far-flung realms of the remote, twinkling stars, another argosy of discovery, exploration and adventure.

CHAPTER I

Antiquity's Shadow

INTO the dazzling, sun-lit system of seven worlds sped the machine men's space ship. A consultation between the professor and 744U-21, joint leaders of the new expedition, had decided upon investigation of the sixth planet. From afar, their telescopes had found that the three inner planets did not rotate, and closer examination of the fourth and fifth planets had brought about the discovery that they lacked an atmosphere. The parent star, or solar orb, was of unusual brilliance and incandescence, and the machine men well knew how hot and how cold the opposite hemispheres of these airless worlds must be, as they were unprotected by an insular blanket of ozone.

The new expedition which had left Zor not long after the termination of the space-war comprised forty-three machine men. Professor Jameson, better known to his mechanical brethren as 21MM392, and 744U-21 had gathered what was left of their old expedition and had augmented this force with many new personalities. Among the adventure-scarred veterans still pregnable to the lure of the mysterious cosmos, and who had come through the war with the Mumes with undamaged heads were 6W-438, 20R-654, 41C-98, 29G-75, 6N-24, 47X-09 and 2Y-4. Then there were three of the

four converts from the ranks of the Tripeds. Glrg, Ravlt and Jbf were known among the Zoromes as 454ZQ2, 92ZQ153 and 5ZQ35. Remnants of the old expedition numbered twelve.

Thirty-one new recruits made up the remainder of the metal crew. Of these, less than half had seen experience with former expeditions. New to the life of the cosmos with its un-repetitious and multi-faceted situations was 119M-5 who before her brain transposition to the head of a metal body had been known among the flesh and blood Zoromes as Zora. Bext, now known as 12W-62, who in the organic life had won the love of Zora and pursued it to a tragic end, was also a new member of the expedition. Now, both were machine men, passionless and practical to an extreme.

"Parts of the planet we are approaching seem well covered with vegetation," observed 41C-98 from his position at one of the telescopes. "It is a good sign."

"Yes, but what of those rough, bare spots?" queried 744U-21. "There are plenty of them."

"Desert, I should say," was 41C-98's reply. "They are still quite difficult to make out."

Professor Jameson, at one of the telescopes, peered intently at the gibbous surface of the sunlit portion which swelled in his vision, as the space-ship raced into the planet's gravitational attraction. It was indeed a huge world, twice the size of his planet, earth. Already, they had discovered that the density in this planet they were approaching in proportion to its size was less than that which the professor knew had characterized the earth. This world boasted four moons, three of them little more than insignificant satellites of well under

a hundred miles in diameter, while the largest of the four was somewhat larger than its three contemporaries combined, possessing a diameter of over one hundred and fifty miles. Still, as moons went, it was a very small one.

As the space-ship plunged nearer the surface, the professor saw what appeared to be yellow, rough splotches of color scattered among the fertile portions of the hemisphere they were approaching. These spots were difficult to define other than that they appeared to be barren spots. Vertical vision failed to give the professor a satisfying perspective, so he levelled his telescope towards the horizon to obtain more of a lateral view. He obtained this at the price of clarity, atmospheric aberration and density, blurring and distorting the yellow formations.

But close investigation proved the professor's unvoiced suspicion. They were buildings of a sort, proclaiming centers of intelligent inhabitants.

"Head for one of the lighter areas in the vicinity of the vegetation," he told 20R-654. "They appear to be cities."

744U-21 took a long, searching look as 20R-654 headed the ship for a stately pile of buildings near the edge of a vast purple and green growth of vegetation, which proved on closer examination to be a forest. In the distance lay a gigantic area of smooth azure, evidently a huge lake or sea. From it radiated tiny, irregular ribbons of silver, one of them forming a semicircle about the cluster of buildings they were approaching.

The space-ship of Zor came to rest in the shadow of purple foliage a short distance from the city. The Zoromes had deemed it inadvisable to land inside the city for several, obvious rea-

sons. Twenty Zoromes were selected to stay with the space-ship which was to rise and circle above the city, while the remainder of the machine men entered the city on foot. The machine men had learned caution on previous occasions of landing on a new planet.

PROFESSOR JAMESON and 744-U-21 were among those to first set foot on the surface of the world. While the space-ship circled on high, alert to scent danger of any kind, the twenty-three machine men walked slowly towards the walled city.

For a short distance, they progressed beneath the shadow of green and purple foliage rising from the ground on rusty brown trunks, partly tree and partly spreading vine, a veritable hybrid of botanic structure, and through the fringe of continuous canopy in the woodland copse they caught occasional glimpses of yellow-surfaced domes and walls. Quite suddenly they burst into the open before the high wall surrounding the mysterious piles.

"It is old," the professor referred to the city. "See the break in the wall where a portion has fallen inward. We can enter that way."

Other evidences of antiquity were also discernible as the machine men approached the gaping fissure in the wall. Lichens of various descriptions, some short and close cropped, others a hanging fringe, decorated various portions of the tall domes seen from without the walls.

"Do you suppose the city is abandoned?" queried 744U-21. "Its appearance suggests a lack of life inside its walls."

"Its builders may have died long ago," offered 47X-09.

"How old do you think—"

The mental remark of 12W-62 was

never finished. The thought died there, as both his own and his listeners' attention became focussed on a flitting figure which stood limned in the fissure of the wall for a second, half crouching, then leaping out of sight beyond. So brief and indistinct was the sight of this apparition, that none of the machine men could describe what they had actually seen. There came to them the sounds of a faint scurrying on the other side of the wall, and then once more there reigned the perpetual silence that had greeted them and had put them in mind of the city's emptiness, a silence now broken only by the dull thuds and scraping and clattering of metal feet as the Zoromes climbed through the break in the wall.

Filing through over the rough, broken chunks of fallen rock, now powdered and worn in spots, the machine men paused and looked about them. To all appearances, it was a dead city, a city of un conjecturable antiquity. Most of the towering stone structures seemed fairly intact, however, though here and there lay scatterings of archaic ruins. A general air of lifelessness and quiet lay over the silent buildings, and the parasitic growth, unhampered and prolific, at the very doors of the edifices savored of desertion, a wholesale exodus of animation. Yet the metal travellers felt probing, invisible eyes upon them in spite of the apparent desolation and disuse. The flitting figure, seen momentarily in the rupture of the great wall, was probably instrumental in arousing this suspicion. Then too, the machine men's telepathic faculties felt vaguely the workings of mental perceptions other than their own close at hand.

With eyes staring from all sides of their heads, the machine men of

Zor peered intently into all windows and breaks in the masonry from their vantage point just inside the wall. But if they were watched, their watchers remained well out of sight within the darkened areas beyond doors and window squares, seeing yet unseen. The professor, scanning the immediate vicinity for some signs of life, noted that the building materials consisted of rough rocks cemented together with a composite the same color as that of the rocks themselves. The only difference lay in the rough, sparkling surface of the rocks contrasting sharply with the dull-surfaced cement work. The rocks were unhewn and betrayed lack of quarrying. Such roughness, the crudeness of which was made up for by the efficiency and wonderful lasting qualities of the cement, presented a not unpleasing design in the aggregate. The cement itself, the professor readily recognized, was of unexpected durability and strength. In most of the ruins, it was the rock which had broken and crumbled.

"Do you seek the creature who ran from the wall?" came the mental query from above in the circling space-ship.

"Where did he go?" 744U-21 asked.

"Into that opening low to the ground near the wall itself," came the reply. "There are others like the same creature in the city."

"Into that cellar," said the professor, pointing to the triangular opening at the very base of a building which reared its bulk not far from the wall. "That is where it went."

Ray destroyer held ready, 12W-62 crouched low and pushed his way into the triangular hole, the professor and 6W-438 behind him. Inside the opening, there was a drop of several feet. They found themselves on a smooth rock floor. Stygian gloom lay beyond

the aura cast by the bright triangle through which they had entered. 12W-62 and 6W-438 put their body lights into use.

In the bright glare, the machine men saw several figures cower and run aimlessly to and fro in the cellar chamber close to the opposite wall. There were seven of them, seven of the strangest looking animals the professor had ever looked upon in all his travels through the cosmos.

Like the machine men, they walked on four legs, jointed in two different places, however. They seemed to have no ankles, their lower leg bones terminating in soft, padded discs. Their upper appendages consisted of many long arms, arms like the thin, jointed legs of spiders. There must have been a dozen of these upper appendages, the professor surmised. The body represented about the same dimensions as the body of a man, although the torso trended towards an ovoid form. The head was strangest of all, being exceedingly diminutive. Its largest feature consisted of a loose, flabby mouth with hanging lips that gave the creature a crestfallen, woebegone expression. Nostrils were visible, though the faculty of hearing was not apparent in exterior detail.

THE most remarkable feature which impressed itself upon the professor was the optical propensity of this species. The eyes represented a weird, yet practical, aspect. There were four of them, each optic situated at the termination of an angular pedicle rising some seven or eight inches out of the small head. These snaky antennae twisted and turned in all directions. At present, they were all bent towards the source of artificial light, curious and blinking.

It was unmistakable from their at-

titude that unnamable fear ruled them, that they were afraid of the machine men. There looked to be no escape, no visible doors or remaining windows, yet, when 12W-62 approached them, one leaped upon the shoulder of another and jumped upward out of sight. Another did the same thing with surprising agility.

"We must seize one of them!" Professor Jameson exclaimed. "They seem intelligent enough for questioning!"

6W-438 sprang forward with 12W-62 just as two more of the creatures leaped on the backs of their companions and hopped upward out of sight.

"There's an opening in the floor above!" cried 6W-438 as he and 12W-62 each seized one of the wailing, terrified things who struggled to be free.

The wild scrambling to escape offered but little resistance to the machine men, the effort proving extremely futile, only bruising and scraping the bodies of the strange things. The professor found himself too late in capturing the remaining one, nor did he make an attempt to do so. Two were sufficient. The last of the seven leaped up and grasped something which dangled from above, then hauled him up. The professor suspected that it was a leg of his companion. This reflected well on their courage even though they had fled, he thought, and it proved their fidelity to one another.

The two captives were brought out into the daylight from the dungeon where they had sought refuge from this unknown menace invading the city. They were questioned, and as the professor had suspected, their intelligence rated low. It was somewhat below the level of an Australian bushboy, an earthly type which lay in the professor's memory, yet well above the mentality of the beasts he had known.

With difficulty, the machine men impressed the fact, upon the two captives, that none of their kind was to be harmed. How universal was the immediate supposition, the professor had found, that a newcomer, a stranger, was to be feared. From world to world, this attitude, in varying degrees, had been paramount. He had discovered this degree of fear to rest largely on the status of mentality. The more intelligent species, such as the Tripeds, had shown little fear, other than a guarded patience, until a stable acquaintanceship had come to exist. Ignorance invokes fear. It is the law.

From constant plying of questions, the machine men learned from the muddled replies and strange mental conceptions of the creatures, that they had not built the city—that no one had built it. The city had always been there, like the trees and rocks. They lived there, yes. Their people had always lived there. It was their home.

Darkness fell not long after this. The machine men of Zor let the two Queegs go and returned to the spaceship. Vocal utterances of the Queegs had been many, and though useless as far as conversation with the Zoromes was concerned, the machine men had learned in the common idiom, the names the four-legged things called themselves.

The machine men were only mildly interested in the old city and what they believed to be its unoriginal inhabitants. At least, if these were descendants of the original builders, the race had certainly degenerated. But the professor did not believe the present inhabitants to be descendants of the builders. For one thing, he pointed out the fact that the age of the city, though possibly running into many thousands of years, did not allow for sufficient time contingent upon the

present degeneration of the species. Nature did not move so swiftly, either forwards or backwards.

The following morning, the machine men once more returned to the old city. This time, they did not find it necessary to seek out the Queegs. They came from their hiding places timidly yet trustingly, urged by an uncontrollable curiosity.

With the Queegs, the machine men set out and explored the city. The Queegs inhabited the ground floors for the most part, few of them ever venturing into the upper chambers for habitation. They were not pressed for room. Numbering probably less than five hundred in population, the Queegs, this particular community of them, found the city much too large for their accommodation.

Although the Queegs did cook their food, they wore no clothes or other accoutrements of civilization. In spite of this, however, the professor had found that nudism or a state of seminudism was not always a mark of barbarism or savagery. Clothes were more or less of a peculiarity, usually worn from habit or requirement, such as protection against temperature, as ornamentation or as a harness for weapons and implements.

Among the Queegs there existed a paradoxical situation which greatly puzzled the professor. They were metal workers, many of their utensils and implements consisting of metal, yet the weapons, with which they killed their meat supply, were made of wood even to the tips, not so much as being tipped or barbed with metal. It seemed inexplicable of solution, unless the Queegs possessed a religious regard against metal as a means of killing. Careful questioning eliminated this possibility.

From a confused reply to the ques-

tion of why they should not use metal weapons instead of wooden ones for slaying their meat, the machine men gathered of the Queegs that they believed the metal wore out sooner than the wood. In fact, the professor noted that one old Queeg in order to emphasize his point was insistent on this supposition, to the degree of exaggeration that a metal weapon was good for but one hunt while a wooden prototype lasted for many hunts. This was a strange viewpoint, and the Zoromes dismissed it as one of the mental vagaries of this strange race.

It commenced to look to the professor, as if their stay on this planet was to be a short one, another mildly interesting exploration of which there had been several since they had left Zor, events of the expedition scarcely worthy of mention beside the more outstanding adventures of the machine men. 744U-21 had discussed with the professor the advisability of leaving this world and examining the outer planets of the system.

The Queegs had spoken of a country several miles away where they went to obtain their meat supply. From the mental impressions of the many-armed creatures, the machine men conceived a barren, desolate country devoid of vegetation, supporting only the animals which the Queegs killed for food. The Queegs had a name for these things they hunted. They called them ohbs. Their environment, as the Queegs described it, however, the machine men doubted.

"Preposterous!" 744U-21 exclaimed. "It is another of their crazy tales—like that of the wooden weapons! We know that animals do not live without vegetation! They must have sustenance!"

"Perhaps a very scanty moss grows there, or short, sparse grass," offered

the professor. "These people seem prone to exaggeration."

"Or the animals they kill may possess the ability to go without food for long periods of time," 6W-438 supplemented, "taking refuge in the protection of the barren territories from a hereditary enemy, the Queegs, perhaps, coming to the fertile areas only when they must eat at rare intervals."

"There is such a barren country not far distant," said 20R-654. "We saw it from the space-ship, you remember."

"We shall go with them on one of their hunts," was 744U-21's ultimatum. "We shall learn if these strange conditions are true, and after that we can stop on the outer planets before leaving the system. There seems to be nothing extraordinary here."

CHAPTER II

Into the Badland

SIXTEEN machine men set out the next day not long after sunrise and started for the hunting territory where the Queegs promised that they would pack back much meat to last them for a long time. Fully thirty Queegs comprised the hunting party, armed with their long, wooden lances, points hardened in the fire and sharpened.

The tireless machine men adapted their pace to suit the Queegs, and soon the lush verdure of purple and green grew less, the trees and bushes becoming farther apart until they eventually died out at the edge of the badlands. And they were truly bad, not only from the standpoint of fertility but bad for travelling as well. Professor Jameson could not see enough sustenance to keep an insect alive. The walking was extremely harsh and treacherous, the ground rough, pitted and calcareous. Depressions, ranging

from tiny pits to great yawning caves, dotted the lifeless expanse. The machine men saw outcroppings of metal from time to time.

"Iron, mostly," 8L-404 observed.

"And some nickel, too, among other things," added 12W-62. "It would seem to be a miner's paradise, if he were not looking for too valuable metals."

"It's a walker's nightmare," 6W-438 reflected as he scrambled out of a rough hole into which he had slipped.

The Queegs made easier progress than the machine men. Besides being more accustomed by experience to this jagged terrain, they were better adapted for more secure footing. Their four pads, soft and shaggy, found a grip, while the flat, smooth metal soles of the machine men slipped and scraped, stopping only when they met a projection between their feet and the planet's gravity.

They had come about four miles into the desert of rough country. Professor Jameson knew from the declination of the sun that the day was well into the afternoon. A day on this world ran approximately thirty-seven earthly hours, he had previously figured.

"Where are the ohbs you came to kill?" he asked of the Queegs.

"We should have seen some of them before this," was the reply. "It cannot be long now."

"Look!" shouted a Queeg. He was a short distance to one side of their advance. "There is one!"

He pointed with his lance. The machine men looked. They saw only the same rough, barren landscape, the same pitted scars and occasional outcrops of ore. The Queegs became excited and ran towards the spot where their fellow pointed with his lance. One of them lifted his weapon above his head and let it fly. Not until the

lance had struck quivering into the side of an indistinguishable gray mass; did the machine men discern the quarry.

With triumphant yells and much excited jabbering, the Queegs hauled out their catch from a small indentation. It was much unlike anything the machine men had expected. In fact, they had known scarcely what to expect, so vague were the descriptions of the weak-minded Queegs. The animal, if it could be called such, appeared like a gigantic slug, fully half as large as one of the metal cubes comprising the body of a Zoromie. As the Queegs hauled it out of the depression where they had found and killed it, the machine men saw that the underside of the ohb was possessed of the traction faculties governing the movements of snakes and worms. From all appearances, the ohb was an invertebrate, presenting a pulpy, unprotected mass of sluggish motion.

"Our theory of migration is gone," said 6W-438. "Those things don't move in and out of here as fast as they would necessarily have to move."

He looked ruefully at his scratched, roughened metal feet and then back at the soft, unprotected body of the ohb. Meanwhile, the Queegs had run on ahead, excited with the search for more of the ohbs. Lances flew back and were cast with power. The Queegs were fair marksmen; besides, they did not have to cast from any great distance. Their prey, as if ignorant of the impending danger and their fate, basked unheeding in the sunlight, two supple antennae on their heads waving lazily. The term "head" could be applied only to one-end of their bodies, that end possessing the antennae and eyes. The ohbs were all body, possessing no appendages, their only features consisting of several small, warty

knobs near the base of the two antennae serving for what the machine men rightly guessed were eyes. There was no visible mouth.

THE machine men hastened onward to catch up with the Queegs who were killing more of the strange animals now abounding in more plentiful numbers, becoming more numerous the farther along they went.

"This is no hunt," said 744U-21. "It is a slaughter. Those things have no protection, no way to escape. They are so dull that they do not even realize their danger."

"How do they exist?" asked 119M-5.

"That is difficult to tell," said the professor. "It is possible that they are like plants in the respect that they gain sustenance largely from sunlight."

"They would die on a cloudy day."

"Unless they were able to store up such energy to be held in reserve."

One of the ohbs doubled its body and gave a high jump into the air after a lance had, from a careless mis-cast, pierced it slightly, surprising the machine men with its unexpected motion. The ohb wriggled quickly into a hole and out of sight, taking the Queeg's lance with it. The Queegs sought to catch it, but the ohb escaped down a tortuous passage leading into the ground.

The machine men noticed that from time to time the smooth skins of the ohbs became overspread with a network of capillary brilliance, like wet punk wood in the dark. At such times, their antennae shivered perceptibly, and others of the creatures came close and gathered around, all intent upon a localized section of the ground.

"They seem to possess a means of silent communication," was 6W-438's opinion, "but it is of such a low intel-

ligence that we cannot grasp it, any more than we can view atoms without the aid of a powerful microscope."

"It is a radiation beyond our perception," 744U-21 summarized.

The Queegs were leaving their victims where they lay, intending to pick them up on the way back. Further and further they plunged their way into the barren country, and more numerous were the dull-witted ohbs they came to kill for meat. In the meantime, the machine men pondered the question as to how the things lived. It was 41C-98 who offered the most plausible solution.

"They feed upon some substance which the ground yields."

"But it is not fertile. The ground here is despairingly sterile."

"Just because it is the usual thing for organic creatures, such as we have known, to exist on fertility does not set an unescapable rule," 41C-98 argued. "These things probably derive their sustenance in some peculiar way from sterility."

The ground grew rougher, the small pits becoming larger and deeper, the angular caves losing their mysterious extremities into the darkness. The corrugated lips of great cavern mouths yawned open here and there, often joined by ragged fissures of varying depth, the sides mottled and perforated, an insane design of uncertainty, of chaos.

The machine men found their progress more perilous and rough. Small projections broke off and sent them rolling into crevices from which their companions assisted them. 744U-21 bade the Queegs to go no farther, stressing the uselessness of it. Already, the creatures they hunted were so numerous that it was often with difficulty that the members of the

party, both Zoromes and Queegs, avoided stepping upon, or stumbling over them. In their zeal, the Queegs had already killed more of the ohbs than they and their metal guests could possibly carry back to the ancient city.

To the Queegs, this slaughter of the defenseless ohbs, the chase, and the roaming among the pitted caves of the barren country represented a great lark, unexcelled recreation, and they were of no initiative to return, but the admonition of the machine men brought them to the resolve of turn-about. Slowly, keeping to the better areas of travel, they picked their way back in the direction of the distant forest, now but a heavy, purple line on the horizon.

On a thin ridge of precarious footing in the line of their advance sat one of the ohbs, its antennae waving mildly curious, its dull, knobby eyes staring and glassy. 6W-438 gave it a shove down the declivity with his foot. Instantly, it shone all over with the fine network of radiance, a sudden palpitation of intricate lacework, a lacework done in fire. In the bottom of the cavity where it came to rest, its antennae waved excitedly while the palpitations of light became soft, dying glows wandering here and there over the soft-skinned body. A general unrest became manifest among the surrounding ohbs, their antennae waving in aroused agitation, but as the one which 6W-438 had shoved down the spine of rock became quiet once more the others subsided, too.

Further along, one of the Queegs pushed an ohb unceremoniously off their chosen path, shoving it with his many arms and prodding it with his lance. There was no repetition of the phenomenon which had been occasioned by 6W-438's act. The grazing herds on every side, on ridges and in

cavities, remained quiet. Exhausted by their efforts of travel and thrills of the chase, the Queegs made no attempts to kill more of the ohbs which were now so numerous as to be occasionally underfoot.

One of the machine men, 47B-97, took a false step and lost his balance, rolling and clattering amid a shower of loosened rock material into an oblong cavity where, with tentacles tangled and seeking to break his fall, he landed upon two of the ohbs.

Instantly, the bright glow previously seen upon the creatures spread threadlike over the two soft bodies, and their antennae fairly vibrated. The ohbs became virtually white with the cold light overspreading their bodies as 47B-97 scrambled to his feet and started climbing the rough side of the hole into which he had fallen. It was then that both Queegs and Zoromes saw the two ohbs execute strange maneuvers with a quickness their appearance belied. They leaped upward and clung to the machine man, their bodies burning with the cold radiance. The ohbs possessed no appendages, yet somehow or other they clung. 47B-97 shook them off and climbed higher. Once more the ohbs leaped up and gripped him, one upon his peaked head, the other hanging to a metal leg. He shook the latter off, but in so doing lost his grip, tumbling back to the bottom where he seized and was seized upon. With two tentacles, he enwrapped the excited ohb which clung to his head, while the one he had shaken from his leg now took a new grip upon a facet of his cubed body.

AROUSED from their temporary inaction, the machine men shook off the first effects of their surprise and consternation. From his fore ten-

tacle, Professor Jameson blazed away with his installed heat ray at the radiant ohb which clung to 47B-97's cubed body. The ohb writhed in agitation, the peculiar light of its body appearing to struggle with the burning intensity cast from above. Stubbornly, the ohb refused to loose its hold, and not until the professor had burnt clear to its center did the thing actually die. Even then, it still clung with a suction grip until a frantically flailing tentacle of 47B-97 smashed away the half charred remains.

Meanwhile, 2Y-4 had leaped into the cavity with his ray gun held ready. 47B-97 had now torn the second ohb from his head but both tentacles were enwrapped by the thing, apparently fused to them in some strange manner.

"It is eating me!" cried 47B-97. "It is eating my metal body!"

"Metal eaters!" Professor Jameson exclaimed. "They absorb metal!"

The machine men and Queegs were too busy, watching 2Y-4 dispatch the second ohb with the ray gun, to look about them. Had they done so, they would have seen coming from every direction a vast legion of hurrying ohbs, their antennae quivering, slight radiations of anticipation suffusing their leaping, crawling bodies. They were being called to the feast, a feast of virgin metal which the gluttonous appetites of their two companions had involuntarily revealed, just as though by vocal means they had shouted their amazing discovery. And now the machine men saw that the head of 47B-97 and his leg and body were slightly roughened and corroded where the two ohbs. had clung. The metal had changed color slightly.

They were too stricken from this sudden, horrifying menace to notice the ominous hordes creeping up all about them until several of the ohbs

leaped over the opposite side of the cavity and down upon 2Y-4 and 47B-97. A cry of alarm escaped one of the Queegs on the outskirts of the gathering as several leaping ohbs knocked him down and wriggled over his fallen body to gain the pure metal they sought.

His cry aroused the machine men and Queegs. The Zoromes spread a net of death about them with their ray guns, while the Queegs, alarmed yet stupidly unafraid of something which they never before had cause to fear, soon exhausted their supply of wooden lances. A flash of realization smote the professor. Little wonder that the Queegs used wooden weapons because metal points soon wore out.

Wave upon wave of the creatures flopped themselves toward the Zoromes and their organic allies, the Queegs. Resolutely, the machine men burnt them down; so slowly did they die that the increasing numbers more than replaced their dead. As far as the eye could see, from every hollow, every ridge, every cave, the aroused ohbs crowded steadily in the direction of one focal point, their antennae waving excitedly while drifting, dying, enlivened currents of unnatural light permeated their bodies. Upon coming in contact with the Zoromes, this light increased to a dazzling intensity, yet strangely enough the light remained more or less internal; it spread no rays.

With as much disregard for self-preservation as they had shown when hunted by the Queegs, the ohbs, fully half as large as the cubed body of a Zorome, seemed possessed of but one unquenchable desire, and that was to glut themselves on pure, refined metal, free of all impurities and unmixed with rock and other foreign material, such as they found regularly in their

daily diet. Nothing less than death stopped their mad charge.

"They're coming faster than we can kill them!" cried 744U-21.

Professor Jameson's heat ray still directed itself upon a half dozen of the ohbs intent on feeding from the metal bodies of 47B-97 and 2Y-4. He looked out over the barren country. On all sides the ground had magically become alive. It literally crawled along towards the machine men to form a rising mound, a mound which threatened to become a mountain of live animosity. Machine men no longer were finding it possible to hold the irresistible horde at a distance. They were firing at the dazzling bodies which curled about their metal feet and leaped among their threshing tentacles. Out of a giant cavity not far away poured thousands of the ohbs, like devils of the deep called suddenly forth to rid the planet's surface of all existence.

A rushing wave of the insidious creatures, unimpeded by the desultory extermination by the Zoromes, suddenly piled down into the cavity on 2Y-4 and 47B-97. A sudden wave of hopelessness overspread the professor. The two were in a death trap, doomed. So were they all unless this rushing tide of destroying life, these apparently indomitable myriads of impending death, were not stopped.

A RAPID calculation brought the professor face to face with the inevitable. Even with sufficient time, the machine men could never kill all the ohbs. The huge slugs knew no living defeat. All they knew was a satiated appetite or death. Probably, they were even unaware of death. Appetite and the means to satisfy it furnished their one purpose of living. To them, eating was living. The two occupa-

tions were synonymous. Even had the machine men been able to kill the ohbs as fast as they came within range, the power of their weapons was not inexhaustible. If the space-ship were only hovering above them, but it was not. Nothing like this had been anticipated, and the space ship was far away in the shadow of the ancient stone piles.

Professor Jameson shared his fears with 744U-21.

"If we might only gain a respite!" the latter exclaimed. "A refuge!"

The ohbs were leaping close and squirming along the ground, seizing the machine men's legs, glowing brilliantly from contact with the metal. Queegs were bowled over and crushed by the weight of the ohbs as they attempted to run and escape. They were frightened by the vast, inconceivable numbers of their recent prey, rather than by any sinister intent which the machine men feared from the ohbs. To the Queegs, they were assailed by an overwhelming mountain of flesh which threatened to crush their bones and squeeze from them their very life, a suffocating wave of organisms threatening their life breath, barring them from escape. But above all, the Queegs were possessed of a nameless dread, the worst terror of all, and this was occasioned by the complete reversal in the attitude of the ohbs.

Yet the ohbs bore the Queegs no more attention than they did the rough, metal-veined crags over which they clambered to seize upon the virgin metal of the Zoromes. The Queegs were but another obstacle, yet the former were too demoralized to think of this. The ohbs, other than weight of numbers, possessed no propensities for harming the Queegs. But the machine men; that was different. The machine men of Zor had met with the

unusual, the unexpected. Invincible to most of the dangers which menaced flesh and blood, they were now assailed by death in an opposite form. Harmless to the Queegs, the ohbs represented the doom peril of the Zoromes.

While the machine men fought off the grim, disgusting creatures, a cry reached them from under the heaving, glowing maelstrom of bodies which more than half filled the cavity into which 47B-97 had fallen and into which 2Y-4 had confidently jumped to his comrade's aid.

"21MM392! 744U-21! Help! We are helpless! They are all about us! Wet, clammy juices they exude from their bodies are turning our metal parts to a fluid which they absorb! If our metal heads are eaten through, we are doomed!"

In answer, Professor Jameson and 744U-21 blazed their weapons into the horrid, twisting mass of struggling ohbs. Charred bodies vibrated, growing dark and rigid with death, the intense brilliance expiring with life, yet there were too many of the things between the two machine men and their companions to offer hope of rescue.

"We are weighed down!" cried 47B-97. "We cannot move!"

"Two of my legs are gone!" was 2Y-4's desperate entreaty for aid. "They have eaten into my metal cube! My brain pan is becoming thin! Do—"

2Y-4's thoughts were suddenly stilled. 744U-21 lifted his ray gun as the frightful horde in the cavity became augmented with new arrivals. The hole was now filled to a level with the feet of the machine men who fought about its rim for survival against the overwhelming menace. Other ohbs flopped, squirmed and jumped over their predecessors to be at the machine men. 47B-97 still cast

excited thought waves which ended in unintelligible ideas abruptly stilled. The professor glimpsed insanity in those final moments.

CHAPTER III

Down the Tunnel

"A REFUGE!" Professor Jameson echoed the recent appeal of 744U-21. "We must try and fight our way to that large tunnel opening over there! At least, they can approach us from but one direction of the compass, while here we are entirely surrounded!"

"To the tunnel mouth!" cried 744U-21. "Run for it!"

Even as they broke into a run, smashing over the hills and clumps of moving ohbs, the machine men saw that from the tunnel there still issued a stream of the creatures menacing them, although the turmoil of the issuing thousands was over. Each step they made brought forth a glowing suffusion of light, to them a death-light. Taking advantage of the duller senses of the ohbs, they progressed swiftly, the remains of their two companions still acting as a magnet for the hurrying thousands.

Into the darkness of the ragged maw they dashed, the gigantic hole yawning with crooked-toothed mouth to receive them. Over the hurrying ohbs they ran into the deeper, darker recesses of the dismal retreat. The ohbs were animated with but one desire, to get to the heralded feast as quickly as possible, a feast of virgin metal announced by the radiating oscillations of many quivering antennae. Those upon which the machine men stepped grew suddenly brilliant, faltering in their hurried march, cross-swept and confused by this new attraction, yet pushed on inexorably by their hind

companions. Strangely, the machine men, the object of the ohbs' desire, escaped right through their ranks while hurrying in the opposite direction, like the ship which miraculously rides the crest of the tidal wave.

To be possessed of but one ambition is to be unswerving. The ohbs were more than this. They were devoid of reason, actuated by instincts, and all their instincts were being guided by the swarming cavity where the two machine men were being rapidly absorbed by some favored dozen or more of the ohbs fortunate enough to have arrived earlier at the banquet.

So long as the Zoromes did not pause in their flight over and through the ranks of these organic, metal absorbers, just so long their possibilities of survival remained. To stop was to commit a rash mistake, an abandonment of hope, a signal for a focal point of the dread destroyers of metal. The last machine man to enter the tunnel caught a final glimpse of a rising mound of twisting, repulsive bodies over the remains of 2Y-4 and 47B-97, a living shroud, a multi-active gravestone. Surviving Queegs struggled, shrieked and ran in several directions. They had seen the docile become stampede-mad; those things which had always submitted meekly to death in the form of the Queegs' wooden lances had been metamorphosed into dangerous animals. So did it appear to the Queegs, regardless of the fact that the ohbs had not attacked them purposely nor desired to do so.

What few of the Queegs had been killed were those unfortunates fallen and crushed beneath the combined weight of the surging hordes. They ran, yet none followed the machine men into the tunnel. They avoided the tunnel for some reason, probably fear, an instinctive desire to remain be-

neath the sky in the open. The Queegs had entered a few of the tunnels on previous occasions, and some of them had never returned.

Professor Jameson hurried along with 6W-438, both machine men running and stumbling side by side. Behind, came 744U-21 and the remaining Zoromes. The darkness of the tunnel was weakly lit with the intermittent flashes of light elicited from the ohbs on which the machine men trod. The light cast upon the rough walls was but a weak dissemination of the brilliance possessed by the strange creatures, yet it served to light the way. Not until the flashes from the trampled ohbs grew fewer and farther between did the machine men bethink themselves of their body light. Then, one and all turned on their own brilliance and sped onward less hesitatingly, free of the reluctance lest they wreck some part of themselves blindly against an unseen angle of the tunnel, for there were many twists and turns.

How far they kept on in this manner, the machine men found it difficult to estimate. Suffice it to say, they soon found the last of the hurrying ohbs and passed it. Those of the things they found from then on were composedly eating away at various portions of the tunnel. The Zoromes assiduously avoided them, the latter taking scarcely any notice of the machine men, ignorant of their appetizing composition, painstakingly extracting and absorbing the metal from the tunnel walls and floor. Here, the machine men found that the ohbs did not possess the ability to cling tightly against the force of gravity they had displayed against the machine men. This, the professor believed was due to a more magnetizing influence of pure metal.

AFTER passing the last of the hurrying cavalcade headed for the tunnel's mouth, the machine men slackened their mad pace and viewed some of the characteristics of the winding thoroughfare they had entered. It was anything except straight, and the floor was everything except smooth. The tunnel's course meandered in every direction. Farther along, it occasionally dropped downward. As the machine men guessed, the subterranean passage had been made by the ohbs following the erraticities and convenience of a favorable vein of metal.

The tunnel inclined; it turned in all directions; it declined, sometimes falling away before assuming a level once more. It grew narrow, so narrow that the machine men could scarcely crawl through it, and then again it broadened out so that its walls became lost in the gloom on either side. The ceiling was scarcely ever high above the conical heads of the Zoromes. Gravity had deprived the slugs of the ability to eat the ceilings. The surface was rough. Here and there pillars had been left standing, the ohbs having eaten around less favorable parts of the lithosphere. The machine men saw that openings branched away in all directions.

"The ground beneath the sterile sections of this world must be honeycombed with tunnels such as these," Professor Jameson observed.

"What shall we do?" queried 6W-438, thinking more of their immediate future than he did of theorizing on the probable conditions of the planet.

"How are we to escape?"

"We can do little better than wait, until the beasts above us have become settled in disposition," said 744U-21. "Then we must try for our escape, avoiding the ohbs and revert-

ing to haste in case they become aroused."

"When the Queegs return to the city without us, the space-ship will come in search of us," the professor stated.

Heads were counted. There were fourteen machine men present. But two were lost, and all knew what had become of them. Sixteen machine men had accompanied the Queegs on their hunt, the remaining Zoromes left to explore the mysteries of the ancient city or else otherwise occupied themselves on board the space-ship.

Many long hours passed. The fourteen Zoromes waited patiently in a hollowed cave which they had rid of ohbs by use of the ray guns. Opinions were expressed concerning the ohbs and their strange propensity for metal assimilation, and guesses were ventured as to how long it would take the Queegs to escape the bad-lands and return to the city. On various parts of their metal anatomy, the machine men found corrosive spots to which the ohbs had briefly clung. In the run through the tunnel, one Zorome had bent a leg in stumbling down a vertical declivity. All were scratched up considerably.

"On our return to the surface, we shall find the ascent more difficult," prophesied 12W-62.

"We may have to help one another," said the professor. "There are some difficult stretches we passed."

"These things we have encountered are the most malignant menaces to our existence we have ever come across since our adventures on the planet of the double sun," spoke 41C-98.

"Yes, but in this case we can come to grips with our foe. On the planet of the double sun, the Emkls spread their menace from another dimension."

In this manner, the machine men of Zor passed a sufficient time to feel assured that the danger above was over, or at least lessened. They contemplated a return back the way they had come. The way they had come had led gradually downward. Had not a sense of declined direction possessed them, they would have realized their deeper penetration by the temperature increase. In the depths, they were slightly closer to the molten center of the planet which, like most planets sustaining life, was more or less of a cooled crust enclosing a super-heated sphere.

They retraced their steps, realizing that they had a long journey before them, made long through the characteristic ill going. Care was taken to avoid contact with the ohbs they occasionally came across. The machine men noticed that the ohbs were found in gatherings, small colonies. To find one ohb was to expect several or many. None were found in isolation. What seemed more peculiar was the lack of skeletons. The things were boneless, a weak cartilage coming the closest to skeletal framework. There were no remains to be found. Bacteria did a thorough performance with this species.

Ahead of them, 6W-438 made a startling discovery.

"The tunnel is swarming with ohbs!"

Carefully, they came forward and shone their body lights ahead of them.

"Do you suppose they scent us in some strange way of theirs?" 744U-21 suggested.

"They do not act as if they were at all aware of our presence," said the professor. "See how intent they are on feeding."

"There may be a clear space beyond them," was 12W-62's opinion. "Shall

we try a dash through them—touching as few as possible and holding our weapons ready?"

"Two of us can do that and report back," said the professor. "You and 9V-474 can go."

WHILE the rest waited, the two machine men, gripping their ray guns, ran through the scattered assemblage of ohbs. A few were touched, giving forth their exudations of light and becoming immediately excited. Their antennae vibrated, and their nearer companions came close about them, expecting they had found an unusually attractive vein of superior metal. 12W-62 killed but one of them, an ohb he landed squarely upon with two metal feet. A maximum brilliance-enveloped the strange creature, and its excitement was seized upon by the rest, spreading like a contagion. To avoid endangering himself and his companions the machine man burnt it up with his ray gun.

The two Zoromes passed out of sight around a bend of the tunnel. From them soon came a radiation that they were once more in the clear. The waiting Zoromes followed.

"It seems strange that so many of the things could congregate in that one place since we passed it on the way down the tunnel," 744U-21 remarked. "I cannot recollect having passed so many of them at one time."

A suspicion was growing in the professor's mind, yet he concealed it as best possible from the rest. He did not care to jump at conclusions. It was better to wait a while.

"This is not the way we came," 6W-438 finally announced. "I have felt it for some time."

"There are several inclines we should have passed before this," said 12W-62.

"We have come back the wrong way."

The machine men stopped and pondered the situation.

"Let us retrace."

They started back the way they had come. Once again, they dashed through the colony of malevolent ohbs. They came to a dividing of the ways, one tunnel splitting into two at a very acute angle.

"I do not recollect which tunnel we came through," 744U-21 confessed. "In fact I do not remember there being two tunnel mouths so adjacent."

"It would not have been noticeable coming from the other direction," said the professor. "The adjoining cavity might easily pass for a blind pocket. Returning makes the difference. Our lights shine upon no end wall, only into interminable depths."

"Which shall we take?"

"Divide up."

"To divide up means to become lost from one another," was 744U-21's ultimatum.

"We are lost now."

"But we are all lost together."

"One way seems as good as another," said the professor. "Let us try the right tunnel, and then if it does not lead us back to familiar spots along the tunnel by which we entered, let us return and try the other one. Tax your memories for familiar characteristics. Let nothing escape your attention."

The machine men did as advised. They kept onward along the convoluting tunnel, hollowed out by the insatiable appetites of the metal absorbers. Side tunnels, many of which doubtless joined or broke up into blank pockets or into multiple tunnels, spread to left and right. They finally came to where the passage they were following dwinned

dled, then grew larger once more, finally ending in a pitted wall.

"The wrong way," said 6W-438. "Luck is against us."

"The chances are against us, you mean," was the professor's utterance.

"We must go back and try the other division."

Wheeling about, the fourteen machine men started back to find and explore the divergence they had discovered in the wrong tunnel they were following. At right angles to their course a yawning intersection lay. Several of the Zoromes claimed they had come this way. Others claimed they had not, that there had been no turns as sharp as this one. Still others among the machine men allowed that even sharper angles than this had been encountered, yet the right way led straight ahead. A few of the Zoromes were uncertain and awaited the outcome of the discussion.

"Stop!" the professor cried. "We argue in vain, to no end! It is a veritable sponge of passageways, this ground! A maze of tunnels! We are lost in a labyrinth!"

The shocking truth was received in mental silence and contemplation. The machine men realized quite suddenly their confusion. They were lost, and every move they made was taking them into more hopeless drains on their remembrance. Here, there was hardly anything to remember. All the passages they had been in bore the same characteristics. They rose on an incline; then fell sharply, curved and even spiralled. Sometimes the machine men scrambled upward; then again they slid and stumbled downward, often in narrowness that scraped their metal bodies in passing through. Again, the tunnel grew wide, occasionally high in some spots.

The floors, even as the ceilings and

walls, were a chaos of roughness interspersed with stalagmites and stalactites, pillars, too. These were not formed from subterranean drippings, however, but were the results occasioned by the wandering caprices of the ohbs. Like a worm-eaten tree, there existed no symmetry or beauty to the columns. Here and there on the tunnel floors lay accumulations of dust and hard bits of material the ohbs had not been able to eat. Often, on the sides and ceilings, fragile, untouched, lithospheric lacework crumbled and became débris in the passage of the Zoromes as the latter pushed their way through the seemingly endless maze, bringing this chaos down about their heads as they advanced.

IN caverns low and broad, they found where cave-ins had occurred, where unsupported weight from above had yielded to gravity, filling parts of the intervening area eaten away by the ohbs. It was the professor's consensus that the ohbs turned much of their provender into a gas, slowly escaping from the pores of their skin. He had examined several of the things quite carefully, approaching close yet not touching them. 744U-21 believed that much of the metal absorption was consumed when the ohbs became suffused with their strange brilliance. By turning off their body light, the machine men found in the Stygian blackness permeating this underworld of chaotic thoroughfares that the ohbs were always visible as soft glowing hulks against the darkness. Their intensity of brilliance often varied.

"We must get out—some way!" 119M-5 exclaimed.

"How?" queried 377X-80. "Other than roaming until we come out upon the surface?"

"That is so," said the professor, "yet we can apply some logic to such a design of meander."

"What do you mean?" queried 744U-21.

"We can continually follow the courses which incline upwards. This should keep bringing us closer to the surface. It is logical to assume that there are many tunnel entrances leading from the surface."

"If we could only find one of them."

"We must follow the inclines."

The machine men employed this seeming expedient, yet it availed them naught. Practicable in theory, it proved, as is often the case, the antithesis of expectation. The inconsistency of the labyrinth was responsible for this, mocking their painstaking, theoretical conclusions with an intricacy of illusory promises. Inclines led often into deeper points, like a rising hill on whose other side drops the ravine. To choose a sloping hole yawning from the depths of the planet often proved an eventually sharp rise again. The machine men did not choose these latter chances through choice. These saturnine futilities of the labyrinth impressed themselves involuntarily upon the Zoromes, giving them the passages which led into end caverns against blank, pitted walls or into deeper areas.

There was always the constant menace of the ohbs. These things were stumbled upon unexpectedly, often in innumerable numbers, again in scattered groups. Dark, perpendicular holes of indeterminable depths lurked for them, ready for the unwary. 6A-491 fell into one of these and bent a metal leg so that it became more or less unmanageable. With difficulty, he was extracted. The simple expedient of filling the hole with débris until he could reach high enough to cling to a

lowered machine man was the means of his withdrawal from the depths of the abysmal pit.

Halting for another conference soon after this distressing episode, the machine men, in keeping with their buried surroundings, manifested hopelessness and gloom. It was the general belief that they were no better off than when they had started their carefully planned attempts to follow only the inclines. The professor confessed the failure of his plan. He believed they were even farther beneath the surface than previously. A slight increase of temperature permeated the linked, inescapable dungeons.

After this, they roamed aimlessly, always keeping together. How much time had passed they did not know. Professor Jameson guessed vaguely that at least an earthly week such as he had once known had elapsed. Yet the professor underestimated, basing his computations on the distance they had tramped almost continuously, and of the distance they had covered he possessed only a vague idea. Their hopeless situation brought back to his mind the delight and wonder he had experienced as a child in that far-gone age, millions of years past, in another life, when he had taken pencil and started at the center of a maze to find his way out. How simple had been that two dimensional game of restricted limits compared to this chaos of interlinked and twisting convolutions spreading in every conceivable direction.

CHAPTER IV

A Morbid Prospect

FATALITY loomed over catastrophe. A rock-fall, having waited long for just such a slight, shuddering vibration of the machine men's passage as now occurred, buried four

of the Zoromes in a broad cavern, completely blocking the forward advance of the column. It was a long arduous task of digging out their buried companions. Three of them were caught in the rock-fall, reporting their damages as best they could from their immovable positions. Legs and tentacles, even metal bodies, had been damaged in the fall. 970Q-17 had been in advance of the main body of Zoromes. Now, he lay in the far side of the fallen débris, partly free of the slide yet unable to extricate himself.

19K-59 and 284D-167 were dug out, and 8L-404 was not far from the course of their excavating when an alarmed cry issued from 970Q-17.

"Ohbs are approaching!"

It was the ever present menace of the labyrinth.

"Lie quiet!" Professor Jameson advised across the impassable weight of intervening débris. "Can you use your ray gun?"

"It is buried!" came the disconsolate reply. "Part of my head and two tentacles are free!"

The machine men increased their efforts at removal of the fallen shale.

"There are three of them," came 970Q-17's thoughts. "Now, four. They are examining the edges of the rock fall for metal."

"Remain quiet!"

"If they approach too close, use your tentacles which are loose. Kill by contraction."

Thus the machine men of Zor advised their helpless and imperilled companion whom they were working desperately to reach.

"They are edging this way slowly!" said 970Q-17. "One of them will soon discover me!"

The machine men worked faster, yet feared they could not reach their

companion in time to avert disaster which would result if an ohb came in contact with 970Q-17. His only chance rested in the possibility of the ohbs overlooking him.

But the long chance failed; the anticipated occurred.

"An ohb is coming closer! It is only inches away!" There followed a momentary pause, tense and drawn out. "It touched me!"

Barred from the grim tragedy, the machine men saw through the mind of 970Q-17 the fateful menace grow suddenly brilliant, its antennae vibrating excitedly, greedily, as it seized with astonishing swiftness upon the coned piece of metal protruding from the mass of fallen roof. The machine men also visualized a rapid, flicking tentacle which wound itself around the inner fires of the pulsating monster, squeezing madly until the thing separated into two parts, the flaming brilliance disappearing immediately. But three more of the hungry things wrapped their hideous, shapeless masses of flesh about the imprisoned machine man and slavered their corrosive juices upon him wherever they touched his metal head.

The tentacles wrenched one free and threw it forcibly against the farther wall where it lay stunned momentarily before creeping back to continue its deadly, purposeful design. Another of the ohbs the machine man ground desperately to torn shreds, using both tentacles in a spasm of repulsion and terror. The remaining monstrosity of glowing body clung relentlessly, and as 970Q-17 battled this ohb, the machine men saw through the eyes of their stricken comrade something which caused them to give him up immediately as lost. Attracted by the agitation of the persistent ohbs, more of the hideous species trouped rapidly

into the cavern and set upon 970Q-17 in hopeless numbers.

It was soon over. First, the wildly threshing tentacles became dissolved and weakened in spots so that they broke and were hurled by the fighting desperation of the machine man across the cavern where on-coming ohbs fell upon the bits of metal and glowed brightly. This was the beginning of the end. Every available inch of 970Q-17's head became covered, while more of the sinister dwellers of the badlands pushed and nudged at their companions to be at the inaccessible delicacy of pure metal. 970Q-17's brain emanations were soon stilled. He died uncomplaining, like a true adventurer of the cosmos, the moment that his metal tentacles were eaten away and he found himself completely helpless.

THE machine men on the other side of the rock-fall slowed their operations. 8L-404 who still lay buried but alive and protected from the ohbs, they finally reached. There were three survivors of the four who had been buried. 284D-167 was so badly damaged that they knew he would never walk again on that set of legs and dented body. He was fortunate to have survived at all. His head had weathered the catastrophe. His head was removed from the wrecked body and carried by a metal companion.

8L-404 had two legs and three tentacles irreparably damaged, while 19K-59 had lost one leg and a tentacle. From the abandoned body and limbs of 284D-167, a metal leg and two tentacles were found serviceable. These parts were given the two deficient Zoromes and were fastened upon them in place of the damaged counterparts. Each of the two now hobbled forward on three lower limbs.

The advisabilities of digging on-

ward to where 970Q-17 lay in order to salvage his remaining appendages was suggested. Both the professor and 744U-21 turned against this.

"By the time we get to the metal body, the ohbs shall have consumed it," Professor Jameson stated.

744U-21 feared, too, that digging to the other side of the cavern, with its aroused, metal-craving ohbs, would be too much like inviting disaster.

"The cave-in exists as a wall of defense," he said. "We have failed to save 970Q-17. Let us not tempt fate but go back the way we came—to try and find a way out."

Once more they set out to find the elusive, a way out of the baffling labyrinth which held them captive. They wondered about their companions in the space-ship above ground. Were they looking for them? How? It would be foolhardy for them to penetrate into the labyrinth and become themselves lost, too. Perhaps they listened that moment with the thought detectors, hoping the buried machine men might stumble luckily upon a release from the intricate maze.

It was the professor's expressed opinion that those above ground were doing all in their power for the lost machine men, yet that which seemed within their power to do appeared puny. There was no way of getting to the lost Zoromes other than risking the peril of becoming lost, and two parties of Zoromes in the myriad intersecting tunnels with their numerous blind ends possessed the same chances of finding each other as they did of finding their way out again. Once more they took up the monotonous march, the perpetual quest for the seemingly unattainable. These dismal places of the subterranean mocked them.

Added to the hopelessness of escape was the vicious menace of the ohbs.

Like the sword of Damocles, their unceasing threat hung another weapon, over the prospects of the Zorómes. Often, the machine men stumbled over one of the partially hidden creatures buried in a pocket of ore. There ensued the whitening glow and the excited quivering of the antennae. The machine men either killed the menace before it had time to summon unwittingly its hideous brethren, or else they ran, so that on the arrival of the nearest ohbs the objects of their agitation were gone. Forgetfulness by the ohbs was the salvation of the machine men. The Zoromes were not hunted. Discovery came by their own accidents.

ONCE, when several of the machine men had slid down a rough, sharply sloping hole, they found themselves in the midst of several of the deadly creatures before they could warn back their companions who came sliding down behind them. Flashing lights revealed more of the things beyond. There was one avenue of escape, a low passage to one side of the larger cavern. Into this they dashed, leaving behind them a congregating horde of the metal absorbers.

Down this tunnel the machine men rushed while behind them they left an excited gathering whose quivering antennae bore a false promise of virgin metal, false because their excited wanderings in the immediate vicinity disclosed only the partly eaten walls of ore. As before, the Zoromes escaped the scourge into whose danger they had momentarily stepped. But soon they ran into another colony. Without slackening their speed, the machine men ran over and through the bright glowing denizens of the depths. Then suddenly, before they had cleared these last ohbs, they ran into

a pitted pocket, the blind end of the tunnel. Rivalling the glow of the machine men's lights, the ohbs waxed brilliant in contact with the metal legs and feet of the trampling Zoromes.

Rapidly and also fearfully, they searched for openings of escape which did not exist. Quickly, they seized upon the one chance left them. Shaking off the avid creatures, striking recklessly and purposefully with their tentacles, the machine men sped back the way they came. In dismay, they halted quickly on rounding a turn and perceiving a fiery glow ahead not more than fifty feet distant, travelling ominously towards them. The colony of ohbs they had recently escaped was answering the inevitable call of their aroused companions in the passageway's end.

"Trapped!"

That single thought from 6W-438 was illuminative of the entire situation. The ranks before them had been swelled to such an extent that escape through the ohbs seemed nigh impossible. On came the metal-eaters, tumbling over one another in a flapping, squirming, hopping wave of glowing anticipation. Salivary glands all over their soft bodies were watering beforetime in prospect of the expected feast. The machine men spread a halo of death into the hurrying vanguard, meanwhile backing off, knowing full well from experience that these abominable dwellers of the desert wastes died much more slowly than the advance of too eager and unfearing reinforcements.

"Watch out behind!" warned Professor Jameson, remembering that between them and the cave's end lay shadows of death even as before them.

Maintaining an effective barrage, the machine men retreated, holding

off the insidious ohbs, yet constantly losing ground and placing themselves nearer the menace from the tunnel's end.

"Turn!" cried 41C-98 who from the eyes in his rear semi-circle of vision perceived the slower ambling ohbs from the tunnel's pocket.

41C-98 whirled his ray gun and blazed away at these latest arrivals who had lost track of the pure metal which had so magically come and then gone, and which they had momentarily touched. Now, they sought vainly, and into their searching ranks flickered the ray weapon of 41C-98, temporarily halting their advance.

Professor Jameson visualized the end. The one free end of the tunnel swarmed with an impassable mass of metal absorbing flesh. They could never run through it. There were too many of the things to cling and drag them down, all the time turning their metal parts to liquid. The horde from the tunnel's end was not unsurmountable, yet futility mocked them from that direction.

They were once more in the same predicament as upon the surface; only before, they had fled into the labyrinth; this time, there were no places which they might run to; walls enclosed them. The ohbs, they well realized, would increase five to one for those killed, their silent communication clamoring from their antennae like a shrieking siren of telepathy. To kill with the ray guns was to gain time, yet what did time mean to them? The professor searched desperately with mechanical eyes for some advantage to further their chances, at least prolong their time. Too, he searched with his mind, yet it was his eyes which first discovered that which his frantic brain almost simultaneously utilized. He saw that the rough, pitted

walls of the tunnel, offering irregular projections, were fairly high here, especially so on one side, on the other side wall and ceiling merging close to the floor.

"Climb the side of the tunnel and hang tight!" he cried. "Use your ray guns to cover your retreat!"

Instantly, thirteen Zoromes scrambled up the side of the tunnel, two of them using but three legs and sorely missing the tentacles they had lost. One of the machine men who was fully equipped with appendages carried the head of 284D-167. Tentacles curled over rough knobs of rocky ore. Some of these broke, the tentacles scraping and curling madly for new holds. Metal feet dug into pockets of the mottled wall, often slipping and catching, or sending the machine man clattering to the tunnel floor among the leaping advance of the ohbs. Already, now that the Zoromes had abandoned their fire, the ohbs were meeting from two sides in as many waves of glutinous hope.

6W-438 was fortunate in his ill fated start, a veil of rocky material encompassing him and throwing him backward where clutching tentacles found nothing to clutch, clattering feet finding nothing to stand upon, each projection giving way as if with damnable intent of allying with the ohbs which now poured over the fallen Zorome. The ray guns of seven machine men bit like darts of death into the fighting creatures which sought 6W-438 as sustenance. As the rays became concentrated and burnt steadily deeper, the bright, glowing bodies grew suddenly dark. 6W-438 hurled them off him with mighty efforts and leaped quickly up the wall, the ray guns of his companions covering his retreat. This time, he sought and found more carefully.

DOWN below, the leaping, flopping ohbs were becoming so numerous and agitated as to light up the tunnel with a dull, fitful glow of unworldly luminosity, and from the open end of the tunnel came pouring hundreds of the things.

The professor saw and recognized that very soon this tunnel would become a crushed, packed mass of flesh from top to bottom, and he knew that before that time the machine men of Zor would be lost, deprived of their senses, dead, disintegrated pieces of metal. Like water in a dammed-up pond, the hopelessly combatible numbers of the ohbs arose. There was but one thing to be done. The machine men did it. They climbed higher. The ceiling grew nearer, and the ravaging menace below crept closer to their feet. No longer did the machine men fire at the ohbs. Why bale water from the flooding river? Many of the Zoromes had climbed as high as possible, clinging with tentacles to the ceiling, their legs braced in niches or projections of the wall. They were as high as it was possible to go. They would exist a few minutes longer; that was all.

The tide rose. Those upon the beach receded from the treacherous waves, climbing to the island's pinnacle where they awaited philosophically the overlapping wall of total inundation which rumbled swiftly closer from far out at sea. The waves reached hungrily higher, lapping viciously the feet of the castaways.

Once more, the machine men of Zor used their ray guns. Death rays, slow deaths to the ohbs, claimed those which fastened themselves about the feet and legs of the clinging Zoromes. Soon it would be the end, yet each Zorome remained adamant against complete resignation. Overwhelmed

by superior odds, it was their way to die fighting.

894R-15, lowest in position on the wall, clambered upward as an ohb fastened itself to his leg. He shook the metal limb vigorously and curled a tentacle away from the wall in order to use his weapon. Vigorous motion, his progress up the wall, and the release of his tentacle in order to use his weapon became the overwhelming odds in a lottery of death. The crags to which he clung were treacherous; his feet did not find the crevices or projections they sought haphazardly; but a chunk of rock was the real executioner. It gave way.

Into the swirling ranks of ohbs fell 894R-15. A dozen ray guns blazed futilely. 12W-62 dropped lower, hazard-ing his own slim chances, clinging to frail, untested portions of the wall while he dangled two tentacles which grazed the horde of hungry ohbs, but to no avail. The doomed machine man disappeared by his own weight into the rapid moving chaos of the ghoulish ohbs. A brilliant blaze of oval light shone from the sea below, and that was all.

"Look! See what I have found!"

It was 119M-5, once Zora of the Zoromes, who had made a discovery of some sort. The projected thought of discovery was unexplanatory, yet in the thought the machine men detected a ring of hope. 119M-5 was farthest down the wall in the direction of the tunnel's end.

"What is it?"

"A cavity high up near the ceiling of the tunnel!"

It was the signal for an immediate exodus in that direction. Perilously, the machine men climbed along the treacherous wall with its inviting, yet sinister, holds. One of the Zoromes slipped and nearly met the fate of

894R-15. To lose hold of the wall was to abandon a grip on hope.

"Keep close together in a long line!" Professor Jameson cried in warning. "Cling with one tentacle to the one before you!"

This safety against the likely possibilities of a sudden fall proved its value. In this manner, two machine men were saved from possible deaths by this sudden freezing of the entire group to the wall when a misstep or broken hold occurred. 119M-5 waited by the entrance to the newly discovered cavity, firing at the ohbs which leaped and clung tenaciously to the feet of the cavalcade.

One by one, the machine men passed into the cavity, while below, the ominous flow of life rose higher, menacing the safe passage of the remaining Zoromes. Professor Jameson, 744U-21 and 119M-5 remained. Three of the brightly clinging ohbs were feeding on the feet of 119M-5. Below, more of the churning mass reached upward, standing on end momentarily in their eagerness, then falling backward to be succeeded by others. Using his ray gun, the professor cleared the appendages of his fellow Zoromes and motioned them into the cavity they had found.

He was the last to enter, lifting his corroded feet and legs out of the rising legions of metal absorbers. His last glimpse up the tunnel saw a flickering slope of the abysmal creatures that had threatened to wipe out the entire party. They were flopping and jumping against the ceiling of the tunnel.

Of the island, only the topmost pinnacle uprose against the flood. A mighty wave bore down upon this. The pinnacle, however, was deserted, for the castaways had been saved. From Scylla to Charybdis, from the

Caskets to the Ortach stone, not a great deal of choice yet an existence of hope.

The machine men found themselves in a low, irregular shaped tunnel which grew larger farther along. It was only another of the many freaks of the meaningless, chaotic labyrinth. Here was a passage which cut narrowly, transversely just below the ceiling of the tunnel in which they had nearly met their doom. Professor Jameson remained still mindful of the peril they had left.

"Let us hurry!" he exclaimed. "There will shortly be an overflow from behind into this tunnel!"

"Why was it the ohbs did not come from this direction, too?" 12W-62 queried.

"Possibly there are none in this tunnel," 744U-21 offered.

CHAPTER V

The Thread of Hope

THEY ran for quite a space, choosing cross passages at random. They had come to find that there existed little difference. Somewhere, there was a difference, a variation of choice which would lead them out of the labyrinth to the surface, but it was not in their possession to know.

Proceeding more leisurely, as there was no haste required in going nowhere now that there was nothing from which to flee, the machine men found themselves weakened structurally. In the escape from the ohbs, many of them had suffered corrosion from the avidity of the metal absorbers. Besides this, there were parts worn out from travel, not to mention the missing parts from three machine men, total in the case of 284D-167.

They were fast becoming a crippled group of subterranean wanderers, prisoners of the labyrinth, in captivity in a vast, never-ceasing network of cells. Yet, in the face of this, they kept onward. The Zoromes noticed a change in the character of the tunnels through which they travelled. For one thing, they were narrower and lower, possessing more pillars and columns. Also, there were fewer deviations and cross tunnels. Choice became limited, which was, as 744U-21 remarked, just as well perhaps.

"There is a noticeable diminution of metal in these last tunnels," the professor observed. "The ohbs did not find so much to eat here. It explains why there are fewer cases of cross tunneling and why we have not seen any of the ohbs since entering here."

"It looked as if all the ohbs on the planet were in that one tunnel we left back there," said 12W-62.

They were a long ways from the place of their recent escape when 6W-438 stopped suddenly and called for silence.

"I heard something!"

Instantly, the clattering and scuffling of metal feet became still, the rustling of tentacles silenced, by rigid immobility. They all listened. From somewhere came a sighing ripple of noise, a tinkling sound as of many small voices merged in conversation.

"What is it?"

The question remained unanswered.

"It seems to be ahead of us," said 744U-21.

With one thought, that of immediate ascertainment, the machine men moved forward. They again stopped after a considerable distance had been covered. The sound now persisted clearly above the noise of their progression. A subdued, bubbling smote their hearing, mixed with a slight

hissing and spattering. They listened.

"Water!"

"Can we be nearing the surface?" 119M-5 queried hopefully.

"Not necessarily," 6W-438 checked the rising tide of hope. "It is probably leakage of some kind."

"Or a subterranean river," 744U-21 suggested.

"We must find it," said Professor Jameson, "and we must exercise care so as not to wander off in a wrong tunnel."

They kept onward in the direction of the water. There was little fear of deviating, for there were scarcely any side tunnels, these cutting transversely in the direction from which they had come. The tunnel commenced to grow damp, and the machine men knew that they were nearing the subterranean waters. The sound of moving water increased to a rushing sound of many echoes. The Zoromes turned unexpectedly into a low-ceiled cavern, their lights reflecting from the surface of troubled waters.

They looked upon what appeared to be a small lake, or a large pool. While a lake is generally accepted as more or less dormant and tranquil, this subterranean lake was not. The tiny whirlpools, upgushing currents and lapping ripples which splashed the walls bore evidence of undercurrents. It was obvious that the water entered the cavern from a source beneath the water level and left it by means of another submerged channel. Turning their body lights all about them, the machine men, standing on the sloping ledge which reached off into the agitated waters, perceived that no tunnel, other than the one down which they had come, opened upon the underground lake. The distance across was not far. In fact, the term lake seemed scarcely merited.

"It is the best chance we have been offered yet," the professor said.

"Of escape you mean?"

"To the surface."

"By following this underground river back to its beginning on the surface!" 6W-438 exclaimed, probing the thoughts of the professor.

"We can try," said 744U-21 hopefully. "It is our best chance."

"What of the currents?" warned 41C-98. "Water currents are often strong. Will they not sweep us downstream into a trap or unscalable abyss?"

DEEP in the mind of 41C-98 was engraved an episode on the planet of the double sun where machine men of Zor had remained imprisoned in the depths of an oceanic abyss for several hundred years. Others of the machine men, survivors of the old expedition, shared this retrospect.

"We can only chance that. There are eleven of us, or twelve, including 284D-167. We must hold close to one another and enter the water single file. In traversing a swift current, we shall mass ourselves three abreast and twist tentacles."

The machine men lost no more time in speculation. In single file, they entered the water. The slope was gradual, and their coned heads disappeared slowly beneath the ruffled surface. In the tentacles of 377X-80 was held the staring head of 284D-167. Limping along on their insufficient quota of legs were 8L-404 and 19K-59. Soon, the cavern was once more deserted above the surface. In the watery depth, the machine men sank deeper and deeper as they followed the decline towards the cavern's center. Professor Jameson, his tentacles curled with those of 6W-438, led the way.

"Be fearful of going to some place from which we may find it difficult to return," admonished 744U-21. "We can always go back to the dry tunnels if we become blocked down here."

"This, too, may prove to be a puzzle," the professor warned. "It is but a section of the labyrinth flooded."

"But we have a path."

"It is true. The current is our pathway. We must keep to it."

And in the current, the machine men now found themselves. It was not too strong, however, exerting but a gentle resistance to their weight. The professor walked always towards the force of the current. To follow the path of least resistance was to become further lost in the intricate mazes of the flooded passageways.

The current became gradually stronger and restricted to a smaller area. What the professor searched for he soon discovered in the murky illumination from his body lights. A hole yawned in the wall just above their heads. Leading up to it lay an incline of hard-packed rock debris consisting of small stones and partially segregated ores, swept down by the force of the current from somewhere farther upstream. Up this incline, the professor walked, 6W-438 behind him. Rising up before the opening, Professor Jameson was met with a force of water-pressure which bowled him over and sent him rolling above the heads of his companions. A grasping tentacle circled the head of 9V-474, and 119M-5 pulled him out of the current to the cavern floor. Despite his metal composition, the force of the current could have easily swept him a goodly distance ere he regained a standing posture. He returned to the grouped machine men beneath the round hole of the inlet.

"Now is the time for our massed advance," said 744U-21.

There was but room for two machine men to crawl at once through the cavern's inlet. One offered less resistance to the strong current.

"We must combine our strength and weight to shove several machine men through the opening so that they may cling to something and afford us a chain along which to move," the professor stated.

The machine men advanced in a compact square of nine, two machine men held in front of this square. Bracing themselves, the entire square stood still before the force of the gushing water pouring swiftly out of the hole in the submerged wall. One of the two machine men, 6A-491, was picked up and held poised. Headfirst, he was hurled into the channel against the force of the current. He disappeared and did not return.

"I have caught hold!" he cried. "Send 41C-98!"

The second machine man went through the same procedure of being thrown into the current by the combined efforts of his fellow Zoromes. He seized the feet of 6A-491 and caught projections to which he held. By reaching as far up the tunnel inlet as his tentacles could reach and 6W-438 could push him, Professor Jameson clung to the feet of 41C-98. Over his body he felt the succession of remaining Zoromes as they climbed into the opening and took positions up ahead of 6A-491.

The last Zorome passed by him, and then the professor clambered over his metal companions in the teeth of the current to where the foremost Zorome clung to the curving, channel wall. Eleven lengths from the flooded cavern, the channel broadened and the current became less forceful through

the fact that it was divided over a larger area of space.

"Where are we?" queried 19K-59. "Is this another of the caverns?"

"Perhaps," said the professor. "It makes little difference, however, for it is probable we are still far from our goal."

"Where do you think this water comes from?"

"A surface lake or river. When we see light other than our own permeating the water, it will then be possible to hope!"

ONCE more the machine men found it practicable to walk in single file. Always they followed the current. To divert from it was to imperil their chances. It was only too easy for them to walk down a flooded tunnel of still waters and into a submarine labyrinth. They had been fortunate in coming upon the main current. It was their thread of hope. Even so, Professor Jameson knew what might be expected of this thread. It seemed an even chance that the current might be sifted through an accumulation of stones further along, stones gathered by the current and past weaknesses of the channel walls. And then again, they might emerge into vast caverns where water poured and seeped through the ceilings.

Where did all this water go? Doubtless, beneath an impervious strata of rock from where it bubbled up as springs upon some other portion of the world. It was drawn up by the sun and cast down once more upon scattered sections of the planet. Some of it found its way once more into the labyrinth to start a new cycle of travel. Cycles, whether amazingly swift, or infinitely distended throughout incalculable ages, are the rule of the universe. Animation and inanima-

tion are both subject to this law. Cycles are discovered in myriad forms.

The machine men followed the current faithfully upstream. In vaster stretches of easier progress, they often came out of the water to find where they were. Invariably, they were in a cavern or broad, winding tunnel worn larger by the water. Sometimes, their prospective emergence from the watery depths brought them up against a flooded ceiling. Many of the caves and tunnels bore ancient trace of the ohbs. This part of the labyrinth was evidently older than that section in which they had become lost.

The holes into which they feared they might fall had existed only in theory. The few pits they discovered were shallow and not dangerous to their progress. It was probable that originally there had been many of these treacherous pits, but the underground river had filled them with silt and other inorganic materials to a level with the rest of the tunnel floor.

With the exception of the current they continually bucked, sometimes strong, sometimes barely perceptible, they found the walking easier than it had been in the dry tunnels. The water offered resistance, but there was no stumbling, slipping, sliding or treacherous rock slides and pits with which to contend. Above all, there was an utter absence of the ohbs which before had occasioned ceaseless vigilance. True, there were denizens of the subterranean waters, but they were not large enough to hamper the machine men, and the ray guns, working quite efficiently under water, counteracted these nuisances.

The machine men were pushing along, ignorant of whether night or day reigned above them, when a surprise greeted them. Professor Jameson suddenly heard himself addressed.

"21MM392!" He looked about him, expecting one of his metal brethren to have made a discovery of some sort. The others looked at him.

None of them had addressed him. That much was a certainty.

"744U-21! 6W-438! Come out of the water!"

All were surprised, but before they could form a query, its answer floated to them on the rapid wings of telepathic thought.

"It is I, 6N-24! 5ZQ35 and 27E-24 are here with me!"

"Where are you?" Professor Jameson called in rising excitement.

"In a cavern! Here, above you, to your right! Come out of the water!"

The eleven machine men scrambled up the incline towards the water's edge. The first head to break the surface stared into the glare of several lights. In the brilliance stood three machine men from the space-ship.

"How did you get here?" queried 744U-21.

"We came to meet you."

"Are you lost?"

"No."

"How did you find us?"

"We have been following your course through the labyrinth with the thought detectors."

"Did the Queegs return and tell you where we went?"

"They came and told us you ran into a hole in the ground when the ohbs went suddenly mad and congregated in astounding numbers. It was a puzzle to us until we discovered that the ohbs were eaters of metal, much like the pistols of the Mumes, except on a different principle."

"How did you get to this cavern?"

"We entered through the hole in the bottom of what the Queegs call the 'disappearing river.' You are not far from the surface now. We came to

meet you. There was little else we could do. When you found the underground river and decided to follow it, we followed your course above the surface in the space-ship. We searched the vicinity for a lake with a whirlpool or a river entering the ground. We discovered the latter."

The twelve Zoromes, one of them but a metal head, were overjoyed to find that they had won out against the labyrinth, and that they were soon to be free again of the hated depths. With the three Zoromes who had come to meet them, they walked the remaining distance to where the river issued from its surface course into the ground. A diffusion of light spread an ethereal glow, intensely welcomed by the Zoromes, into a submarine cavern. Here, the machine men found more of their comrades. Reunited, they walked out upon the river bed and to shore.

ONCE again, they found themselves in the sunlight. Strange to say, they discovered that they were not so far from the ancient city as they had thought themselves to be. They had done a great deal of wandering in circles before finding the underground river. From then on, their course had been a straighter one. But even so, the old city with its strange inhabitants lay many miles off.

Professor Jameson and his metal companions once more found themselves in the space-ship of Zor, which headed skyward. The machine men, after their nightmare with the metal-eating ohbs in the dismal caverns of the great labyrinth, had no further desire to remain upon the planet. In fact, their recent experiences had prejudiced them against further exploration of the system, and they headed off towards the stars.

"At one time we contemplated

shooting a depth explosion deep into the ground when you were in peril," said 20R-654. "We sailed high overhead and even took careful aim."

"You mean when we were in the tunnel full of ohbs?" queried the professor understandingly.

"Yes. 119M-5 found an escape just in time or else we should have dropped our depth explosion."

"You would probably have killed every ohb within a radius of a quarter mile."

"Our chances of survival would have been less than one out of twenty," 6W-438 pondered.

"A much better way to go," said 744U-21, recollecting quite vividly the fates of 970Q-17 and three others of the Zoromes.

"It was a much more tense moment at that time than you realized," was 29G-75's observation.

"Where and which way now?" queried 20R-654. "We were to have discussed that before leaving this system."

"Let us head in the direction of distant Sirius," Professor Jameson offered. "We may be long in reaching it, we may never reach the star but I have a definite reason. Besides, there are many systems between here and Sirius which we shall pass."

"What interests you in the system of Sirius?" 744U-21 asked.

"You will remember that on our last visit to earth we discovered by means of Zlestrm's time bubble that mankind had deserted the earth for a world of Sirius five million years after the twentieth century. That was thirty-five million years ago. It is highly improbable that any semblance of mankind remains. Such a hope represents extreme futility, yet it may be that there are records of some kind left behind. That is why eventually I

wish to enter the system of Sirius."

"Another encounter such as we have just escaped," said 6W-438 staring back at the gibbous orb of a dwindling planet, "and we may never reach Sirius."

To this pessimism, Professor Jameson uttered a bit of sound philosophy taken from a long dead civilization of the remote and distant past.

"If it were not for the clouds, we would not enjoy the sun."

THE END

Questionnaire

1. Does the planet, Venus, shine by its own light? (See Page 9)
2. What is a light year? (See Page 9)
3. What is an angstrom? (See Page 9)
4. Do we know what the ether is? (See Page 10)
5. What has the spectroscope done for astronomy? (See Page 10)
6. What fictitious word is a *memoria technica* for the colors of the spectrum of white light? (See Page 10).
7. What is Doppler's principle and how is it applied in astronomy? (See Page 11)
8. Where is the seat of human intelligence supposed to be located? (See Page 16)
9. Describe the cortex of the cerebrum. (See Page 16)
10. What is the connection between the brain and our sensations? (See Page 16)
11. What are neurones? (See Page 16)
12. What organ enables a human being to stand upright? (See Page 21)
13. What is the approximate velocity of the molecules in the earth's atmosphere? (See Page 25)
14. How can a line, surface or solid be derived from a point? (See Page 53)
15. What is the Einsteinean Interval? (See Page 54)
16. What is the relation of the apparent dimensions of an object with its velocity? (See Page 54)
17. A planet has four satellites. Three are of 100 miles diameter each; the fourth is of 150 miles diameter. How will they compare in volume? (See Page 87)
18. What is the psychological relation of ignorance and fear? (See Page 90)
19. What is the name of the mosquito which is a carrier of malaria? (See Page 116)
20. What is the ionized layer of the atmosphere called and how does it affect radio transmission? (See Page 119)
21. Define music from the physical standpoint. (See Page 119)
22. Of what planet is Phobos a satellite? (See Page 119)
23. What is taken as the highest velocity attainable by a man falling in space? (See Page 132)

The Pygmies of Phobos

By RALPH ROBIN

Quite an unusual theme is treated in "The Pygmies of Phobos." It tells of the future and of the triumphs of science, especially in the field of synthesis which may be conveniently defined as artificial creation. It will give the readers plenty to think about.

CHAPTER I

BY the year 2500, man had conquered the earth. His people lived as comfortably in the Congo basin and Antarctica as they did in Virginia. Wild plants and animals existed only by man's dispensation in parks and research territories. Cobras were gone from India, sharks from Oceana, Anopheles mosquitoes from South America. The annoying species had been swept away with the dangerous species. Only a few old people remembered house-flies and poison ivy.

There was enormous abundance of food due to scientific agriculture and chemical synthesis. Scientific industry provided an equal abundance of manufactured goods.

Excepting organic defects not yet bred out of the human race, disease no longer existed. Pathogenic germs had been exterminated with the same thoroughness as the larger pernicious organisms. Cancer was preventable. Dietary sicknesses had disappeared with the poverty that caused them.

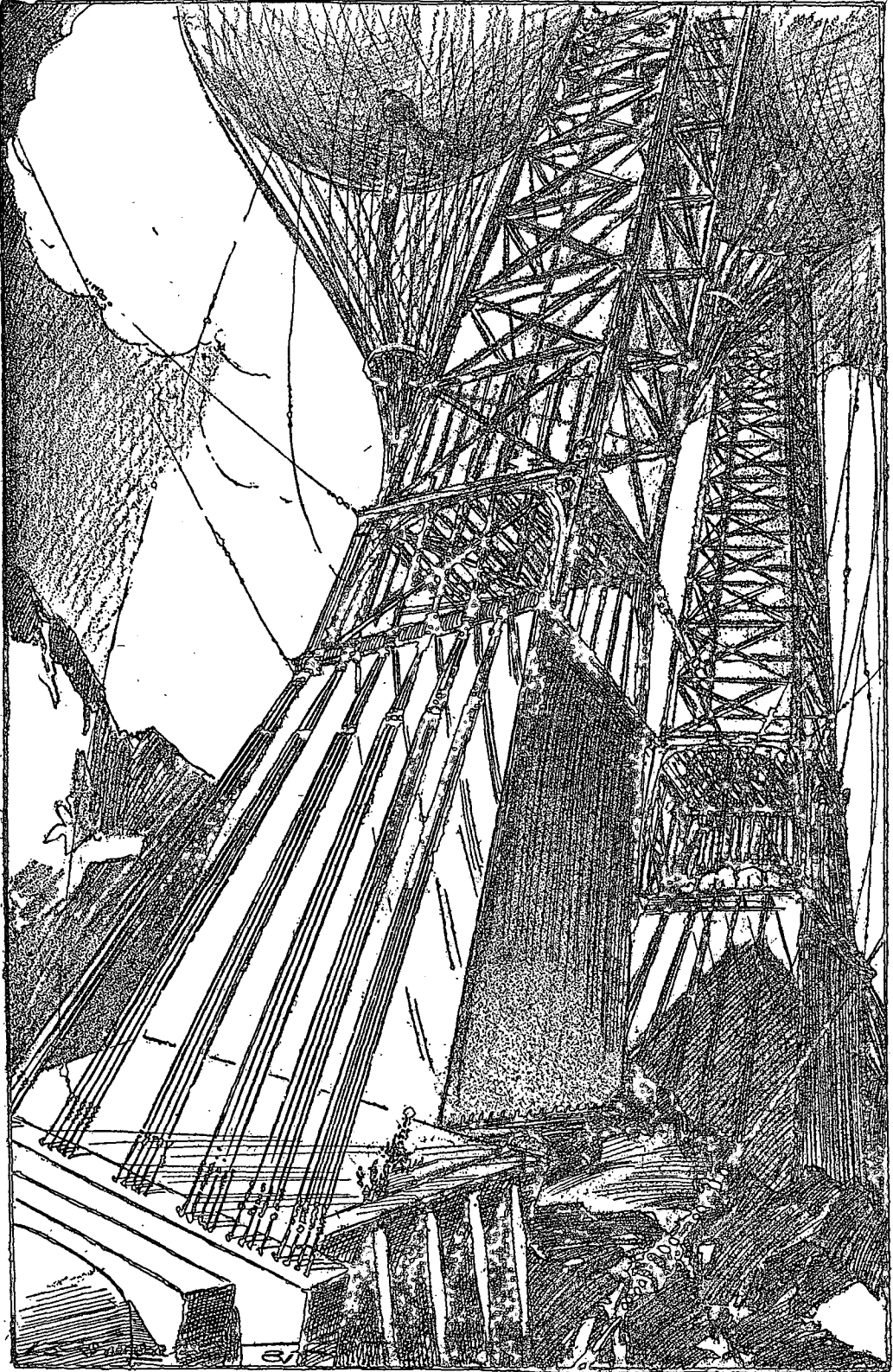
Man bored hundreds of miles into the heart of the world and derived stupendous power from the internal heat. He mined inexhaustibly the iron core of the earth. The seas were a chemical factory; the stratosphere was the normal passenger route; the

ocean floor was a zoo for the amusement of children.

But the scientists, despite their accomplishments, were not happy. They had conquered one world, uncovering its secrets and realizing its potentialities. But they thirsted for intimate knowledge of other worlds. Particularly, they were fascinated by the unanswered question: Is there intelligence on other planets?

Two methods of finding an answer had been discussed for centuries: the first, construction of telescopes of incredible power; the second, planetary exploration in space-ships. However, the scientists knew from their theoretical optics that the telescope had reached its maximum efficiency and still was not much more powerful than the type in use in A. D. 1940. And they were unable to build space-ships. For no source of power except atomic energy was at once sufficiently compact and potent to propel space-ships, and the secret of atomic power still eluded science.

There was one more possibility, the chance of receiving radio signals broadcast by intelligent beings on another planet. This idea, since the invention of wireless, had been the subject for countless romances. For a good reason, the possibility was never given serious consideration.



The towers, built of a specially developed alloy, were supported by buttresses sunk into mountain sides and by huge balloons.

The earth is surrounded by an ionized area in the upper atmosphere known as the Kennelly-Heaviside layer. Through this layer of ions no ordinary radio waves can pass. Because the Kennelly-Heaviside layer varies roughly between heights of fifty and one hundred miles—heights at which air-pressure is negligible, it cannot be reached by balloon.

In the year 2505 the scientists conceived an ambitious plan. They would erect a structure high enough to surmount the Kennelly-Heaviside layer, and on its summit they would place their antennae. Engineering difficulties were tremendous, but the structure was finished in nine years at the cost of a billion man-days, the unit of money, and 2300 lives. In its completed form, it consisted of two towers, each 120 miles high, erected on adjoining peaks in the Himalayas. Between them, the wireless antennae were strung. The towers, built of a specially developed alloy, were supported by buttresses sunk into mountain sides and by huge balloons.

At the base of one of the towers was the Himalaya Station, powerfully equipped for all-wave broadcasting and receiving. A perfectly insulated wire rose through the ionosphere to the transmitting antenna. There was another line to carry down the impulses—if any—impinging on the receiving antenna.

Night and day an operator of the Himalaya Station was on duty trying to tune in signals from beyond the earth. Each sound, whether it seemed a rattle of static or the faint remnant of a Moscow program, was electrically recorded for future study by a staff of twenty-five physicists, radio engineers, etymologists, mathematicians, and psychologists. Usually the oper-

ator had the anxious company of three or four staff-members.

The scientists were waiting both for messages sent out independently and for answers to their own broadcast challenge. Using series of dashes separated by long pauses, they transmitted alternately the first five integers and the first five numerical squares. The scientists reasoned that intelligent organisms of other worlds would reply with the cubes.

For five months after the erection of the towers, no sound incontestably a signal was recorded. Once there came through for a few minutes an intermittent burr, the pauses of which proved to be only of two lengths, one twice the other: 3.4 and 6.8 seconds. Again, a series of sounds seemed to have a musical quality. But those instances were not convincing, since the Station's savants never got tired debating their authenticity.

DIRECTOR STANLEY EVANS sat in the receiving chamber with two of the staff, Henri Voisin, the radio engineer, and Gobind Lal, the psychologist. They watched the operator, with ear-phones clamped on his head, fruitlessly shifting up and down the radio wave spectrum. Forlornly, they thought of 2300 lives, of the human effort contained in a billion man-days . . . Evans, collaborating with the two other scientists, had been the first who dared to suggest the gigantic experiment.

"Shall I report negative results to the International Council of Scientific Research and ask them to devote the towers to some utilitarian use?" Director Evans asked, speaking in a low voice so as not to disturb the operator.

He was really addressing the question to himself so his companions did not answer.

"And leave the problem unsolved?" Evans mused.

"*Il faut attendre*," said the Frenchman. "We must wait—wait."

But his voice and gestures showed that he was not skilled at waiting.

"We must learn to wait," added Gobind Lal, who was a psychologist and an oriental.

"Shut up!" snapped the operator, waving his hand. He was too excited to remember proprieties. "I'm getting something."

His face was twisted in wonder as he worked for clarity. In a moment he said, "I'll switch it to loud."

Instantly the room was filled with a wave of sound that was akin to music but was not exactly music. The volume was considerable, but somehow the scientists felt that they must strain to hear and somehow that the symphony was straining to be heard.

"The music of the spheres," gasped Gobind Lal.

Stanley Evans never loved music, because he never understood it. Its appreciation was one quality lacking in the emotional-mental complex of a great man. He would try contemptuously to dismiss the art with hard-boiled physics, saying, "Music is only a combination of tones the frequencies of which bear a simple numerical relation to each other."

Yet, as he listened to the strains from beyond the earth, he knew that this harmony had a meaning for him. The music was engendering in his mind pictures at once unearthly and natural. And, by an intangible process in his brain, the pictures were becoming thoughts; the thoughts were becoming unspoken English words.

With a start Evans realized that "the music of the spheres" was a telepathic message. He searched the en-

tranced faces of his companions and saw that they also understood.

Now the thought-language beat sharply, simply into Evans' consciousness. The musical signals vibrating across the void were narrating the history of a trans-spacial people.

CHAPTER II

HEAR! [Evans did not need that commanding salutation.] If there be any beings of the solar system or other planetary system intelligent enough to receive this message, let them hear the story—and the doom—of the inhabitants of Phobos, satellite of Mars, the fourth planet of the Sun. We know certainly of no intelligent creatures except our own race and the Martians—if the sluggish degenerates of the Red Planet can be said to have intelligence. For thousands of years we have been capable of exploring space, but we never attempted it for fear of conflict with other races.

I, Sanno, called "the last poet of Phobos," have composed this thought-message on behalf of my people. But who can tell what quirk of racial egotism in the hour of approaching death has impelled us to broadcast our history over and over until the end?

Life had its beginnings on Mars billions of years ago, when the planet was wrapped in steam and bathed with evanescent rain. In the course of eons, animal life diverged into two great classes: the one-celled and the many-celled. As Mars matured, species of each group kept in step through time and became independent of a watery medium. Ultimately a protozoan and a metazoan species, in the same era, acquired intelligence. The one-celled species was the ancestor of

the Phobians; the many-celled species was the ancestor of the present-day Martians.

The protozoans were $1/25$ of an inch high; man reared six feet from the ground. [Director Evans heard "man," and in his mind was a picture of a strange but decidedly human creature. Incidentally, " $1/25$ of an inch" registered to him as "one millimeter."]

It would seem that the two species could not conflict. But as soon as man became aware of his almost microscopic mental equal, he developed an unreasonable hatred for him. Likewise, our ancestors conceived an equal detestation for their huge rivals. With incredible foolishness, the two species engaged in a relentless war. As long as they were in the barbaric stage, they could not do much serious harm to each other. But the scientific age came at last to metazoa and protozoa alike. Then the war was forced by both sides with horrible ingenuity.

Man had the advantage that came from his greater size and mobility. On the other hand, the protozoa, who multiplied by budding, could recoup their losses of life with greater rapidity than man. Another thing: although our ancestors had not yet invented thought-music, they were constitutionally able to communicate by simple thought transference as well as by sound. That ability let a group of one-celled people act with greater speed and cooperation than was possible among men.

The human soldiers located protozoan cities and attempted to wipe them out with explosives, poison gases, and death-rays. The protozoa in trying similar tactics were, of course, enormously handicapped by their size. It took years of labor by the whole race to produce enough gas to destroy one

human town. Their most successful offense was biological. From water-dwelling protozoans—our unintelligent cousins, they developed deadly parasites. They trained armies of these to invade the blood-stream of man. Sometimes one-third, two-thirds of the human population was destroyed by an artificial epidemic.

WHEN the metazoa had checked a parasite or acquired natural immunity to it, they built up their population by enforced propagation and returned to the war with renewed ferocity. They annihilated city after city of the enemy until our ancestors produced a new parasite and forced them to concentrate all their energy on fighting another epidemic.

What made the war particularly absurd was the fact that it was going on while Mars was still a well-watered, fertile planet. There would have been plenty of room for the expansion of two metazoan peoples, let alone a metazoan and a protozoan race. Despite its absurdity, the war continued for thousands of years. The two species probably would have fought till one or both were exterminated, except for a fortunate accident.

Two great pacifist leaders appeared at the same time: the human Mattilalla and the protozoan Ornath.

Mattilalla was originally a professional soldier and an amateur biologist. Once when he was engaged with his men in the destruction of a protozoan city, he captured Ornath unharmed for experimentation.

For spying purposes the two races had learned to understand each other's language. The human scientists had even invented a machine which enabled man, within narrow limits, to understand protozoan telepathy.

Somehow or other, before he

reached the dissection-microscope, Ornath entered into a conversation with his captor. Or, what is probably nearer the truth, Mattilalla began a conversation with his captive. For the conversation had to be of the metazoan's choosing since he could not have heard the prisoner without either an amplifier or a thought-detector.

Our books record the traditional dialogue of the two prophets:

Ornath: Why do our peoples war?

Mattilalla: You are one-celled; we are many-celled.

Ornath: We are bound together by reason. Do you feel yourselves more akin to the many-celled carnivores of the yellow forest than you do to us? To what end would we exterminate each other?

Mattilalla: Ask not of ends. We are in the lap of Father Mars, and he weaves our fates with the sky, which is her loom and Phobos and Deimos her shuttles. So said the ancient priests.

Ornath: If Mars is our father, we are fratricidal sons. Let us persuade our peoples to cease this foolish war.

We have long tales, mostly legendary, of how Ornath and Mattilalla exhorted their species to live in peace. I should only weary you with the telling. Suffice it to say, the strange pair succeeded in bringing an end to the war.

Mattilalla: Little Ornath, you speak wisely. Our duty is not bound by our individual species; our duty is to Reason.

For a few centuries the human race and the protozoa lived amicably together on their planet. But they were always tormented by the fear that some day war would break out anew. So our ancestors proposed a permanent solution. They suggested that their species should leave Mars and take up habitation on Phobos.

The metazoans protested that the little people had as much right to live on Mars as they, but the other race was firm. As a matter of fact, the protozoans were acting in their own interests aside from the peace question: they reasoned that the 310 square miles on the surface of the little satellite were sufficient for their needs and that the weak gravitational pull would give them enormous powers. All that they asked of man was his help in equipping Phobos—a sphere with neither atmosphere nor water—and transporting them there.

The protozoa did not need oxygen since our race derives its bodily energy from breaking down carbohydrates and certain inorganic compounds. They required water for their bodies and for raising their bacterial food. They needed an atmosphere of inert gas to prevent their exploding from internal pressure.

A great transparent shell was built around Phobos in order to hold in the water and nitrogen that were sent 3700 miles in rockets. When the work was completed, the whole protozoan population left the Red Planet for their new home.

From the first the project was a success. Only a few lives were lost *en route*. In several years our ancestors were acclimatized, prosperous Phobians. It seems that the smallness of Phobos was invigorating psychologically as well as physically. On Mars the Phobians had been really a freak of nature. They were too little, and knew it, for the huge expanses of the planet. On Phobos they experienced a new feeling of freedom and enthusiasm. The Phobian population actually increased.

The Martians were similarly affected by the realization that they had their world to themselves.

Relations of the two species were friendlier than ever now that they inhabited different spheres. Commerce by rocket and intellectual exchange by radio went on constantly. Sometimes it was hard to tell which people had made a certain new scientific discovery, so closely were they cooperating. The Phobians, because of their size, were able to manufacture devices, particularly instruments of precision, which seemed miracles of delicacy to the ponderous Martians. These they exchanged for Martian raw materials.

The greatest achievement of the two peoples was the mutual development of atomic power. The process was based on a radioactive element—thorium—unhappily it is still the only method we know.

And Phobos revolved about Mars, and the planet revolved around the Sun taking Phobos with him. Centuries passed; millennia passed; one epoch grew into another, which grew into a third. . . .

MARS, while generations of my people watched him, was becoming the dry planet we now know. As the Martians became more and more engrossed in their irrigation projects, interchange between planet and satellite dwindled.

A Martian engineer expressed his people's attitude:

"Microscopic folk be happy in your miniature, self-sufficient world. Keep to yourselves your petty scientific toys, your petty scientific theories. We are joyless men, without time for cultural tricks. We must struggle without end against two enemies, time and desiccation. You cannot help us; you do not need our help."

Our world was indeed practically self-sufficient. What chemical elements

were lacking on Phobos we had long since imported in—for us—huge quantities. Since matter, roughly speaking, is indestructible and since Phobos is an enclosed sphere, we could use the elements over and over again. Our science was such that we could utilize them no matter what form they had taken. There was only one exception: thorium was transmuted in the energy process. Every century or so we had to obtain a new supply from Mars.

From necessity, the engineers became the governing class of the Red Planet. Under their rule the inhabitants fought off the creeping deserts with tremendous skill and sacrifice. Great closed aqueducts, thousands of miles long, were built to distribute the water released alternately from the north and south polar caps. Thorium-power units were set up to drive the water through the conduits. Botanists, developing plants for low water need and high food value, finally produced the "subsistence plant."

This plant, which reproduces by spores, thrives on a minimum of moisture and multiplies itself semi-annually without cultivation. It derives its name from the fact that its root, stem, and leaves, taken together, contain all food elements necessary to the existence and health of man.

In the course of time the aqueducts and power generators were rendered indestructible. The fertile land along the aqueducts was sown with subsistence plant, and the production of other foods was eventually abandoned.

There was nothing more to do, or so it seemed to the Martians. Labor was almost unnecessary. The people ate the spontaneous crops and lived in corrosion-proof dwellings. Their wants were few. Culture and science had become integral parts of the war

against the desert; when the war was over, culture and science, for the most part, disappeared. Only two major industries remained—harvesting of the subsistence plant and thorium-mining.

Harvesting was an unskilled, seasonal job, carried out cooperatively by the whole population. It required little labor and no intelligence. The thorium-extractors were a hereditary group descended from the old governing-engineers. They performed their highly technical work automatically, just as their fathers had taught it to them and with no understanding of its theory.

There were no further efforts made to increase the food supply. As the planet lost its water, the fertile borders of the canals diminished in width. As they narrowed, the Martian population decreased in accordance with natural laws. Each millennium found Mars less populous as well as less civilized.

Eventually the Martians reached a cultural level, below which they could not fall without extinction. There they stagnated; except for their inherited irrigation system, no better than herbivorous animals.

That is the history of the two worlds up to a few months ago. There remains a brief account of catastrophic events, which is better adapted to the narrative rather than to the historical manner.

As a direct narrative, you will hear the rest of my story—unless the doom strikes first.

CHAPTER III

THAKIN, the Elected-Dictator of the Phobians, addressed the High Conference. An accomplished orator, he employed mainly the spoken language. But some ideas, for

greater clarity, he would deliver as thought-messages; and now and then a pseudopod would touch a switch, releasing a wave of emphatic thought-music in the High Chamber.

“Why should the Phobian race be content with our miserable sphere while the great planet Mars awaits our conquest?” Thakin declaimed. “Is it not shameful that I, Elected-Dictator, must beg permission to carry out my great plans for Phobos?”

An agitated mixture of words and thought flowed from the High Conference. Finally one voice dominated the rest. Stentor was speaking:

“By Ornath the Prophet, you are preaching treason to the Phobian race. Our ancestors pledged an eternal peace with the Martians. We shall not violate that pledge, even though the Martians sink to the level of instinctive animals!”

In a moment, Thakin was beside himself with anger. “Fools!” he shrieked. “Fools!” And suddenly he rolled from the thought-organ a defiant peal of hate.

Another wave of thought surged through the High Chamber: “Down with Thakin—down with Thakin—down with Thakin. Elect Stentor! Stentor for Elected-Dictator!”

Thakin was now calm, menacingly calm. “Members of the High Conference, I resign my office,” he transmitted. “Elect Stentor in my place—and live to regret it.”

Thereupon, followed by his few adherents in the Conference, Thakin left the Chamber.

Outside the building, the little group crowded into Thakin’s plane and flew to the ex-Dictator’s private laboratory. They were met by an anxious group of technicians and Thakinists.

“Yes,” Thakin announced. “It’s all

over—just as I expected. We will go ahead with our plans.”

“Everything is ready,” the chief technician informed him. “The entire Phobian stock of thorium has already been stolen and sent to Mars. We had trouble with the guards, but we made short work of them. The patriotic blockheads would not believe that your orders were authentic.

“The second ship has been loaded with the supplies, and it is my advice that we all leave at once before the new Elected-Dictator suspects a plot.”

En route to the Red Planet, Thakin explained his whole project to his political followers, who had not been in full touch with his scientific researches.

“I have been directing work on both Phobos and Mars,” he said. “Recently we have discovered a method whereby the whole body of a Phobian can be introduced into the brain of a Martian and live there in a parasitic state as long as the Martian lives. The Phobian will acquire all the senses and feelings of his host. He will retain his own memory and intelligence, but he will also acquire the memory of the Martian. Finally, he will have full control over the movements of the body he inhabits.

“When we get to Mars, we will seize a number of Martians and introduce some of our party into their brains. The Phobo-Martians, with their superior intelligence and initiative, will easily become the rulers of the metazoan race.

“Then Phobos will be at our mercy—not that we shall care much then for the insignificant moon. But I shall teach the Phobians a lesson for disputing my will.”

When the ship approached the surface of Mars, the pilot skillfully guid-

ed it to a settled part of the planet. With great care he landed the vessel before the entrance to one of the communal Martian dwelling-places, a huge structure of shining metal. It was no light job to maneuver the ship, one of the largest ever built on Phobos—fully fifteen inches long.

Thakin touched an apparatus, and instantly there was set up a loud and cacophonous tooting. The noise brought the Martians swarming out of their building. Now the space-ship shot suddenly through the open door, coming to rest on the floor.

A puff of green gas burst from a valve on the ship. Its molecules spread through the building, and every Martian, who breathed them, fell unconscious. The inhabitants who had rushed outside returned, their dull faces full of wonder, and they too fell unconscious.

AFTER a few minutes the Phobians emerged. Working rapidly they put together their delicate machines and connected them to a thorium unit. They selected ten young, healthy adult Martians and, operating mechanically, introduced a Phobian into the brain of each individual. Thakin, himself; Clav, the chief technician; Gormi, who had been Thakin's closest political associate; and the seven next most important persons of the party were the Phobians who assumed Martian bodies. The other members of the expedition re-entered their vessel and flew off in search of a suitable place for a temporary colony.

A few hours later the unconscious Martians came to their senses. The building filled with the sound of their excited babbling:

“Did you see the bird?”

“What a funny bird.”

"Ho, ho, we all went to sleep in the day time."

"What happened?"

"Let's eat."

"We just woke up, but it isn't morning."

"Silence!" a sharp voice commanded. Never in their placid lives had these people been directly ordered to do something. They knew that they must harvest their crop and did it without being told. They were accustomed to carrying out the occasional suggestions of the thorium-miners. But that ringing order, "Silence!" was different from anything they had ever heard.

Out of surprise, they obeyed. The babbling subsided. Then they saw that it was only their comrade Tallapo who had shouted the command. So they started to chatter again. They did not know that the body was the body of Tallapo but the mind was the mind of Thakin.

"All of you be silent!" Thakin rapped out.

This time the nine Phobo-Martians surrounded their leader with expressions of reverent attention on their faces. They meant to set an example of obedience among the Martians, and they succeeded. Again there was silence.

"I command—you obey," Thakin stated in a loud clear voice. Then he added in even simpler language, "You . . . do . . . what . . . I . . . say."

A Martian near by laughed with child-like derision. Instantly Thakin flashed a thought-message to his followers. In a moment the poor Martian was secured by three of the invaders. Gormi obtained a heavy electric wire somewhere and beat the prisoner with it till he howled in pain. It was the first lesson of these Martians in practical government.

They watched the punishment with awe and terror. If they felt any indignation that some of their number—as it seemed—should suddenly decide to command and maltreat the rest of them, they did not dare to show it.

Thakin and his nine were now undisputed rulers of a Martian community of three hundred persons. Driven by strong wills and numerous blows, the whole colony was set to work constructing machinery and weapons. Radio units, thought-organs, desert tractors, and aeroplanes were built; ray-guns, projectile-guns, and cylinders of poison gases were laid up by the hundreds.

Then Thakin organized the adult men into a small army and began the serious conquest of Mars.

The degenerate metazoans offered little resistance to the Phobo-Martians. Thakin spread his power along the great canals and from oasis to oasis. As he conquered, he added to his army and increased his store of machines. He summoned to him the Phobian followers who had retained the unicellular form and gave them Martian bodies. They became his sa-traps. He trained a number of thorium-miners, the more intelligent class of natives, to be his lower officers.

Five months after the landing, the subjugation of a planet was complete. Thakin felt that his time for revenge had come—revenge against his own people for the crime of rebuking his ambition. Therefore, he radioed to us on Phobos his terrible and faithful ultimatum:

"Phobian people! It is I, Thakin, Emperor of Mars and rightful ruler of Phobos, who speak.

"I command you to deliver to me the usurper, Stentor, for the death he deserves.

"I further command that you, your

whole race, leave Phobos on space-ships which I shall provide, and that you settle on Mars where your rebelliousness may be controlled under my watchful eye.

"If you do not within ten days promise obedience to my commands, I shall order the shell of Phobos destroyed by explosive rockets."

During the first day, terror reigned on Phobos. We realized how helpless we were before Thakin. If you remember, the traitor had deprived us of our thorium. Without that element, we could not flee to a distant planet; we could not strengthen our protective shell with electro-magnetic layers; we could not operate weapons of offense. But, panic-stricken as the populace was, nobody suggested surrender. We loved our little world too much to leave it for a slave-colony on Mars.

BY the third day, we were resigned to our fate. Stentor had offered to sacrifice himself in order to make terms, but the Phobian race was too loyal to consider the proposal. A defiant message was sent to Thakin. He replied that he would be lenient! He would allow us a few more days of life—perhaps the full period of the ultimatum. In other words, he would torture us further by not letting us know at what hour, during the next seven days, the blow would fall.

On the fifth day, the scientist Athist conceived the fruitless but noble project of recounting our history and our doom to whatever trans-spatial beings might hear our signals. Immediately our race adopted the idea with enthusiasm. It would make it easier to die if a knowledge of the Phobian civilization might be preserved on some distant world from oblivion.

Stentor delegated me to compose a

musical thought-message. I finish it now on the sixth day. In a few minutes the record will be connected to the broadcaster. Automatically, the testament of Phobos will be repeated until Thakin's rockets put an end to our existence.

In the name of the Phobian people, farewell!

There was a pause and a loud click. Again the thought-music rolled into the room.

"Hear! If there be any beings of the solar system or other planetary system intelligent enough to receive—"

Henri Voisin, enormously excited, sprang to his feet. "We must save them," he shouted gripping Evans by the shoulder. "We must save them!"

"Can you build a space-ship?" Evans asked him drily.

Voisin sat down disconsolately.

"Life had its beginning on Mars—" the message continued.

For a few minutes the three scientists were silent. They were half-listening to the tale they already knew and were thinking about, not unanswered, but unanswerable questions.

Suddenly—the suddenness was startling—the music stopped. The only sound was a blur of static until Gobind Lal quietly remarked, "That must be the end."

Voisin, the emotional, began to weep.

"Be quiet, you fool," Evans ordered. "It is right that we should feel a pang for the little people of Phobos, but the scientists of the earth have a new task to perform. A species so much like us as to be human is living on Mars in a state of degeneration and slavery. And we cannot help the Martians without atomic power.

"Tomorrow I shall begin experiments on thorium."

THE END

The Airwayman

By LOGAN CARLISLE

"**R** IDICULOUS! You'll have to tell us a better story than that if you want to escape twenty years in the penitentiary. Now come clean—we want the truth!" The speaker, florid of face and square-toed of foot-gear, was typical of the blustering plain clothes man that has persisted in our metropolitan police forces for the past hundred years.

"Just a minute, Williams. Let me handle this." The president of the Transatlantic Aerial Express interrupted and turned to me, the usual cordiality of his manner absent, though, as always, he was polite.

"Vaden, you have been with my company for ten years. Your record as a pilot is unexcelled. Your character has been above question. But now you return empty handed, after leaving for London an hour ago with the largest shipment of radium ever made. And your story—why it's impossible. Before I pass judgment let me hear it again. Start from the beginning and don't leave anything out. Some forgotten detail may come to your mind, that will enable us to place at least a little credence in this wild tale."

I thought for a moment. Was this to be the end of my service in the T. A. X., as the great Transatlantic Aerial Express was generally called? Was I, after years of honorable and faithful service to end my career by marching to a felon's cell? Well, my story was true—they *must* believe me.

"I was scheduled," I began, "to take out the 0900 limited for London this morning, on what would have been my

three thousandth and second trip on that route. I entered the dispatch office at about 0830, a full half-hour before schedule time. There I signed for the radium and the other express packages. I have flown radium before, so the item did not surprise me although the amount, nine ounces, did. This, however, was my first intimation that the shipment was one of unusual value. In accordance with our regulations regarding precautions to be taken, when cargoes are valued in excess of ten million dollars, I armed myself and the plane. I carried two thirty-shot automatic revolvers and the plane was fitted with one free and one fixed machine gun, each capable of 9,000 shots per minute. The loading of the guns was superintended by Air Gunner Erlic who was assigned to make the trip with me. I have never flown with Erlic before.

"Just as we boarded the plane, a mechanic rushed up and asked me, 'Want parachutes, sir?' I told him to make silk shirts for himself out of them, but not to bother me with such unnecessary junk. I knew that the question was a routine one that has never been deleted in the revisions of the check-off list for departure, that was first adopted in 1980. It annoyed me as I was in a hurry and never carry parachutes anyhow. In fact none of our pilots do. I believe that the last time a pilot found a parachute necessary was away back in 2027 when Jones got drunk and collided with the west-bound over Belle Isle and our present collision-warning device, which calls the pilot's attention forcibly to other planes that happen to be within twenty miles radius, practically precludes the possibility of

aerial collision. I am making a point of these apparently irrelevant details because I distinctly remember seeing the mechanic, who had spoken to me about the parachutes, remove them from the plane and I am therefore morally certain that none were aboard.

"EVERYTHING was as it should be and I took off on schedule exactly at 0900. The air was smooth—not the slightest sign of a bump. The visibility was at maximum. I ordinarily land and take off manually and this time was no exception. I poured the soup to her—beg pardon—I opened the throttles and the three propellers turned up six thousand revolutions per minute. In about ten minutes I had reached 40,000 feet and throttled down to about 300 miles per, until our reaction rocket accelerators could get into action. At 0921 the air speed meter registered 500 miles per hour and I accordingly housed the engines as per routine to reduce head resistance. The retracting gear, housing the port engine, stuck a little, and it was not until 0925 that I was able to get it completely inside the fuselage of the plane. I had set the gyroscopic flight controls in operation but had not cut in the automatic navigator, so when I finished with the engine I took an observation and determined that the extra wind-resistance on the port side had pulled us about fifty miles to the left or northward of the great circle course. To maintain schedule I increased speed from the normal 1000 miles per hour to about 1050 and unhooked the gyroscopic flight controls taking control manually. I intended to get a little manual practice in both flight and navigation, which I felt I needed. We haven't had an automatic control fail in years, but even the best of machines are not absolutely infallible. At any rate a good pilot should be competent to take manual control at any time so I always avail my-

self of any reasonable opportunity for a little practice. At about 0955 while passing over Newfoundland I felt the controls become rigid in my grasp, indicating that somehow the automatic control had become operative. At the same time I felt a metallic band fasten around my right wrist fastening it to the manual elevator control column. As quickly as I could I grabbed for my automatic with my left hand, but was stopped by the pressure of a steel muzzle on my temple. There was Erlic pointing a revolver at my head! Resistance was useless. Without a word he relieved me of my arms, tossing them out of reach. I then noticed that I was locked to the wheel by a peculiar sort of handcuff.

"What does this mean, Erlic? Are you crazy?" I asked. 'Calm yourself, pilot,' he replied. 'All I want is the radium. I could wreck both you and the plane, but I prefer not to do any unnecessary killing. The automatic control is set and will maintain your flight for the hour that will elapse before the time lock on my little handcuff will release you. Just think how considerate I am to you and the Company to go to all the trouble to enable you to bring yourself and the plane safely to earth. Why I worked a month designing and building that little lock!'

"I figured that, if the man had planned this piracy so well, mere words would not deter him, so I silently watched him secure the radium from the express room and place it securely in an inner pocket of his clothing. I forgot to mention that in order to gain speed I had dropped to 20,000 feet, the lowest permissible altitude, intending to regain altitude gradually as I caught up to schedule.

"So long, pilot,' said Erlic as, to my horror, he opened a side door after cutting down our speed to less than 200 miles per hour by reducing the discharge rate of the rocket accelerators, and then

jumped out *without a parachute!*

"Evidently Erlic, while fairly familiar with the mechanism of the plane, was not aware that there is a cut-out button on the wheel for throwing out the gyro flight control, so as soon as he had disappeared I shifted to hand control and, as I thought I would have to land to recover the radium from his body, I cut out the rockets and unhoused the engines. I again had a little difficulty with the port engine so I lost about a minute. Circling back I spotted him falling in an upright position about 5000 feet from the ground. I dove to get closer to the spot where he would strike. To my amazement his descent seemed to decelerate although there was no sign of a parachute or other descending gear. He hit the ground feet first and began running! He had fallen 20,000 feet and still lived! My brain reeled, but I retained my wits sufficiently to open fire on him with my fixed gun. Before I had fired more than two or three rounds he disappeared into a thick forest and after patrolling the area without catching a glimpse of him, until the time lock on the handcuffs released me, I returned home at full speed to report. I know that it sounds impossible, but he did drop free for 20,000 feet and lived. He was even unhurt."

INCREDULITY was stamped on the faces of my auditors and Stevens, the president, was just about to speak when in walked the bent, shuffling figure of a dilapidated old man. And that old man was universally acknowledged as the greatest scientist the world had ever known! We all rose respectfully.

"Well, well, gentlemen. What have we here?" Parenthetically I may state that he owned about five-eighths of the stock of T. A. X. "What's my young friend Vaden been doing?" The condition of affairs was sketched rapidly for his benefit. He turned to me and I ex-

pected anything in the world except his next words: "Strip, young man."

Uncomprehendingly I obeyed and he looked me over carefully from head to foot. Finally he nodded his head in a satisfied manner and motioned me to dress. Turning to Stevens, he said, "The story's true. But Erlic is a fool. His invention, whatever it is, that enabled him to drop freely is worth twice as much as the radium he stole. I would have paid as much as that for the patent rights myself."

The looks of bewilderment he received from all sides was balm to the old gentleman's vanity. Totally without arrogance or conceit, he loved dearly to mystify his friends by some statement such as that he had just made, founded on premises very obscure or incomprehensible to his audience, but usually based on some scientific fact that was, to him at least, absurdly simple.

"Well, gentlemen," said he with a chuckle, "the poor old man will have to explain again. First of all I can see no sign of even a slight radium burn on young Vaden's body. That is proof positive that he hasn't come near it. Our radium rooms are shielded from the radioactive rays to protect the pilots and passengers. The leaden boxes in which the radium is actually transported also act as a shield, but the tube inside the box actually holding the radium is unshielded although for obvious reasons we have made the tubes *seem* to be. This fact has been kept very secret and I do not believe anyone present except Stevens knew of it before. With this lack of protection even the act of forcing the box, which I designed with that purpose in view, would bring the hands of the thief into sufficiently close contact with the rays from the radium to cause severe burns—at least from such a large quantity. Also I inspected Vaden's plane with the aid of a very simple device of

mine—a little tellurium thermo-couple galvanometer which is very sensitive to radio-active emanations. With this I determined that the path followed by Erlic in carrying the radium from the strong room was directly to the side door as Vaden has said. I did that right away as the traces of the emanations were very faint due to the short interval of time elapsed and they would have vanished in an hour or so more. Of course it might be argued that Vaden was Erlic's confederate, but I know him too well to imagine that for a minute. In addition I vaguely remember Erlic, who was an excellent mechanic, mentioning to me something about an invention of his to take the place of parachutes. I was very busy and parachutes are not very valuable nowadays, so I told him to see me later, which he never did. Apparently his invention works."

"**B**UT what's to be done now?" burst out Stevens. "We've got to get that radium back. If we don't it will play havoc with our theft insurance premiums in the future. And we must discourage similar attempts. The next time the plane might be full of passengers and the bandits might not be as considerate as Erlic and might wreck the plane. A disaster of that magnitude would just about wreck the company. Goodness only knows we have a hard enough time now meeting the competition of the Atlantic Aero Mail Line. We only keep ahead of them because of your frequent inventions, Doctor, that enable us to operate more efficiently than our competitors."

"Just leave it to my young friend and your very humble servant," was Dr. Schoener's reply. "Come, Vaden."

He led me out of the Company's office to the flying field. The field manager came running. "Let's have the new ship ready for ten hours flight, Johnson,

as soon as we can get it. And send a truck to my laboratory for some apparatus we may need. Have the driver give this note to my assistant there."

No trace of age was apparent in the Doctor's manner of handling the situation. But what struck me most was his assurance of success. All of his plans seemed predicated upon our ability to apprehend Erlic before he could escape from Newfoundland. Personally I did not feel so assured of our ultimate success as I firmly believed that such a resourceful rascal, as Erlic had proved himself to be, would have made good his escape from Newfoundland by either plane or submersible long ago. However as the Doctor was in charge none dared gainsay his plans and we acted as if his assumptions were basically correct.

Our trip to Newfoundland was quick but uneventful. Arriving over the spot where I saw Erlic hit the ground I searched for a suitable landing field. I spotted what seemed to be an adequate place but, due to my anxiety for speed, I neglected to "drag" the field—that is, fly over it at slow speed a few feet off the ground to search for hidden ditches or other obstructions. For this neglect I suffered the humiliation of having my first "crack-up." A hidden ditch gave us a jolt that carried away my landing gear although luckily neither of us suffered any injury other than a mild shaking up.

"Doctor, how can I forgive myself? Erlic is sure to escape now and all because of my carelessness."

"I'm not so sure of that, Vaden. I expect to locate him very shortly."

Dejectedly I watched the Doctor set up one of the pieces of apparatus he had brought along in the plane. It was a square box-like affair with what appeared to be a compass on top. Pressing a lever on one side of the box the

Doctor carefully watched the needle of the compass. For a few seconds it was motionless. Then as a humming inside the box increased in volume, the needle vibrated rapidly for a few seconds and then came to rest.

"Ah! That way," said the Doctor. "Follow me, young man. And for your sins you may carry this detector."

For about two miles we walked, checking up occasionally on the proper direction. Suddenly in a small open spot in the forest we came upon Erlic's body. I started to rush towards it when Doctor Schoener grabbed me firmly.

"Not so fast, not so fast—remember your landing."

WITH these words he released me and I watched him array himself in a peculiar appearing suit of coveralls that left exposed only his head and hands. These he proceeded to cover with a helmet of what appeared to be rubber and fitted with eyepieces of iridescent glass and gloves of the same rubbery appearance. Then, with a small leaden box under his arm he walked over to the body. I started to follow but he motioned me back. After reaching the body he removed a package that I recognized as the radium, placed it in the lead box and then proceeded to divest himself of his outlandish clothing. He then motioned me forward and together we examined Erlic. He was obviously dead but I could detect no sign of injury other than a slight inflammation around the eyes. Suspended beneath his shoulders was a broad belt which I had not observed him wearing while in the plane with me. Attached to this belt were several cartridges all of which seemed to have been discharged. On his feet were lead shoes such as divers wear. The sole of one shoe was hammered as if he had attempted to drive a hole in the sole. As

incomprehensible as the mystery seemed, there was the criminal and we had recovered the radium. Our chase was ended.

* * * * *

While waiting for a relief plane that was coming in response to a radio message from us, to bring a new landing gear for my plane I asked the Doctor for an explanation of the mysteries of Erlic's safe fall, his death, *et cetera*.

"Well, young man, you are very inquisitive. I'll just play you a game of Ask Me Another. What is the first question? What troubles you most?"

"How did you know that we would get Erlic so easily?"

"Very simple. As I explained in the office our radium shipments are made in a protected box which shields the personnel of the plane from the effects of the radio-active emanations. The container actually holding the stuff is not shielded although it appears to be. Close contact for even a few minutes with such a large quantity of radium will result in severe burns which will probably disable a man. If the contact lasts as long as an hour death will almost inevitably result. From your description of the terrain and the way Erlic jumped before forcing you to steer for a certain spot which he had picked out before hand, I was led to believe that his planned mode of escape, whether by boat or plane, would require him to travel for a considerable distance. At any rate I believed that he would be forced to keep the radium on his person long enough to put him out of commission."

"But how did he jump from such a terrific height and still live?"

"If you persist in asking such childish questions I shall be forced to revise my present high opinion of your intelligence. Naturally you recognized on the belt around Erlic, miniature counterparts of the rocket accelerators that

drive your plane through the upper air. If you remember some of the reports of the experiments conducted in the earliest days of aviation, you will recollect that as early as 1927 it was discovered that the terminal velocity or the greatest speed obtainable by an average sized man falling freely does not exceed 132 miles per hour. The acceleration of gravity at that speed is counter-balanced by the increased resistance of the air. You, yourself once told me the old story of MacLean and his Ebelhard fighter, using it as a classic example of quick thinking in an emergency. I agreed with you at that time that MacLean showed great presence of mind when, after his plane broke in two due to a defective fitting, while going at 300 miles per hour, he waited until he had *slowed* down in his fall before opening his parachute. You pointed out that his quick thinking enabled him to control the natural desire to open the parachute immediately to check his fall and probably saved his life for the parachutes of that day would have stood up under the strain of checking the descent of a man falling at the terminal velocity of 132 miles per hour, but in all probability would have failed had he subjected it to the strain of a 300 mile per hour fall. Now Erlic weighed about 160 pounds. At his greatest speed of fall his momentum would be according to the old mass times the velocity formula this would have given 160 times 175 foot-pounds—175 feet per second being his approximate speed. Very roughly about ten pounds of the explosive used in our rockets would counteract this momentum and bring him to a dead stop. In his belt you saw that he had about twenty one-pound cartridges. If the rockets can speed up a plane against the resistance of the air, they can certainly slow a man's fall against the

power of gravity. The same can decelerate."

"BUT why didn't I see the belt on him while he was in the plane with me. And why did he wear the lead soled shoes?"

"Not so fast— Here, I'd better use the time honored methods of detectives and reconstruct the whole business for you. Erlic was in the plane with you as you took off. He was wearing the belt underneath his coveralls. He realized that if the belt was visible it would attract attention and in view of his intentions he was by no means anxious to hold the center of the stage. After locking you to the wheel he secured the radium and then donned the diver's shoes to enable him to fall vertically. If he fell upside down or sideways his rockets would not have checked his fall. When he reached the proper altitude in his drop he touched off his rockets one by one to check the force of the fall gradually. Otherwise he would have dislocated his shoulders. The gases from the rockets tore his coveralls to shreds so that the belt is now visible. On reaching the ground he plunged into the forest and began making his way to his means of escape from this region. But in the meantime the radium began to burn him. Suddenly he realized the situation. He put down the radium, retired to a safe distance, and attempted to make a shielded box for it out of the sole of one of the diver's shoes. But his eyesight failing from the effects of the exposure to the rays that he had already suffered, he realized that he was doomed. Rather than linger on in agony for hours he preferred to end it more quickly by again subjecting himself to the effects of the radium. Apparently he had lost his revolver and could not shoot himself.

THE END

In the Realm of Books

By C. A. BRANDT

IT seems that the dim lights of Hollywood burn a little brighter at times, and at such a moment apparently it was decided to film H. Rider Haggard's "She." Not a very happy selection to be sure, from our point of view, as this particular novel is more of a fantastic adventure story, than a science-fiction product.

The scenes of "She" as originally written by Mr. Haggard were laid in Equatorial Africa, but as the African sets which had done heavy duty in Trader Horn and Tarzan films, were probably somewhat shopworn, it was decided to transplant everything into the Arctic. Sic. Poor Mr. Haggard is probably still rotating in his grave.

Aside from this rather inexcusable liberty taken with a well known story, the film is quite good, in fact it could almost be called a magnificent spectacle, and it is well worth seeing. The technicians who created the various scenes did a truly wonderful job, and particularly the temple scenes are really impressive. Towards the end there is one scene which is really excellent, when "She" steps repeatedly into the flame of eternal youth, and then changes and withers from a queenly beautiful girl into a feeble tottering old hag.

The rôle of "She" is played by Miss Helen Gahagan, a calm, imperious, statuesque type of beauty, and she plays it to perfection.

Why the film intelligentzia in Hollywood persist in filming passé and semi-passé books, instead of turning to up-to-date stuff which we have been printing for years is beyond my understanding.

But, be sure and see "She" sometime.

THE NEW GULLIVER

Can you remember the time when you first read "Gulliver's Travels"? Probably at an age when the word "Satire" was still below your mental and verbal horizon? When we read it again, perhaps the real meaning of the story dawned on us, but whether we remember it as a clever satire or merely as a fantastic story, we never forgot it. As usual, not America, but Europe again carries off the cinematic laurels, this time Soviet Russia. Whoever is responsible for the idea of filming "Gulliver's Travels," as well as anybody who had anything to do with its production, deserves a great deal

of praise. The Soviet artists and technicians of course did not miss the opportunity of utilizing the film for Soviet propaganda, and it is very cleverly done.

The film was made in the Soviet Studios in Moscow. It is a most remarkable production. Only one human actor appears in the entire "New Gulliver," except in the introduction, the rest are puppets, ingeniously constructed from suitable materials. These puppets walk, run, climb, use tools, dance, smoke, smile, and sing, and in general behave in a very lifelike way even if the motions are somewhat jerky. At times very comical effects are produced, elongated necks and arms and rapidly enlarging ears create a good deal of amusement. Naturally, the puppets representing the King of Court Officials, the police and the Officers of the Army, as well as the puppets representing Capital are grotesquely hideous, whereas the worker-puppets are very much humanized, their leader having even a very decided resemblance to Karl Marx. The change in facial expressions must have been done by using a great number of interchangeable hands. I was told that for some of the chief puppets as many as 500 heads were on hand. It took from twenty to thirty exposures to record a simple movement, such as the lifting of a hand or a foot, on the principle of an animated cartoon. No wonder, it took five years to make the film.

Some of the effects are really very funny, for instance when the king is going to make a speech, for which function he is apparently too dumb, the Prime Minister turns on a hidden phonograph, etc., etc. "The New Gulliver" is quite different from Gulliver's adventures in Lilliput, and the story runs somewhat like this. In a children's camp, a certain boy (V. Konstantinov) is presented with a copy of "Gulliver's Travels." While the book is being read aloud, our hero falls asleep and dreams that he is Gulliver and has just arrived in Lilliput. But the Lilliput of old has been modernized. It is thoroughly mechanized and motorized. Autos abound, ditto telephones. Guns and cannons are very much in evidence, in short Lilliput has achieved as we so proudly hail it: "a civilization." We first see Gulliver thoroughly trussed up on the sea shore. He is then dragged by tractors to the Capital. We see

him sitting at a huge scaffold, which serves him as a table, consuming vast quantities of food which is brought to him on a conveyor belt. We see him entertained at this banquet, and when one of the midget entertainers (imagine midgets in Lilliput) gets beaten, he decides to investigate labor conditions in Lilliput. We are now taken into the subterranean factories of Lilliput, a munition plant, which is the cleverest scene in the whole film. A warning reaches Gulliver to beware of poisoning, and at night he is visited by the labor leader and he promises to help them in their revolt against the existing capitalistic order. Revolution and Civil War come next. Thanks to Gulliver, the tide turns in favor of the workers, when he drags off the Lilliputian Navy, and Labor emerges triumphantly. Just as he calls the first meeting of the Lilliputian Soviet to order, Gulliver wakes up.

If you have a chance to see this film, do so. It is really worth while. I would call it a "Five Star" picture.

Again Good News for Tarzan Fans

TARZAN AND THE LEOPARD MEN. By Edgar Rice Burroughs, published by Edgar Rice Burroughs, Inc., Tarzana, Cal. 332 pages. \$2.00.

Before beginning to talk about this book, let me whisper some more good news to you Tarzan Fans: Mr. Burroughs is working on a new story dealing with further adventures of Tarzan in the "Inner World." He is also planning another Tarzan Story with Africa, the usual background.

In "Tarzan and the Leopard Men," we are taken once more into the wildest wilds of unexplored Africa, which this time is more realistically described than heretofore. At times the text reads like an extra-good travelogue. We get intimate glimpses of the daily life of black tribes, we even witness a cannibalistic orgy in a Pigmy village. With Tarzan we enter the forbidden stronghold and secret temple of the Leopard Men, see them worship a live Leopard, and see the initiation of a new white High Priestess, a beautiful American Girl who is on a secret mission in Africa, and who was captured by the Leopardists after her Safari left her stranded and helpless in the jungle. Of course Tarzan rescues the girl.

This book, like all other Tarzan books, is packed with thrills from cover to cover, and should be a welcome addition to all Tarzan specialists. The illustrations which are quite good are by Allan St. John who also did the all-around jacket design which depicts Tarzan in action *versus* the steel-clawed Leopard men.

Two Anti Communistic Adventure Stories

RED DRUMS. By Alexander Powell, published by Washburn.

LAND UNDER ENGLAND. By Joseph O'Neill, published by Simon & Schuster, New York. 296 pages. \$2.00.

The magazines are crowded and the book market is flooded with all kinds of more or less inspired Anti-Communist and Anti-Soviet books. It seems that the "Big Boodle Boys" are shaking in their "made to order boots" and are desperately trying to stem the growing tide of Anti-Capitalistic sentiment, and are seemingly inducing all kinds of writers to do something about it. Result: All kinds of books, articles and stories depicting the terrible results of Communism, etc. And though I believe that nobody can stem or halt the advance of knowledge, I am resolved to remain neutral and only to read about it, voicing my opinion to the best of my knowledge, and ability. "Red Drums" is a thoroughly enjoyable International spy-murder-mystery adventure, strictly anti-Red, in which arch plotters against sacred Capitalism get it in the w.k. neck.

In "Land under England" the most horrible picture imaginable of a Communist State is pictured. To make the lure of the book more attractive the scene is laid in the Interior of the Earth, where the descendants of an ancient Roman Cohort have founded a strictly Communist State. The all absorbing State has absorbed even the very souls of the people, they have become living machines, devoid of speech, which has been replaced by telepathy. All individualism, all initiative has been rigidly suppressed. Each person has become a very small cog in the State's Machinery, living and working, unseeing and unfeeling, for the good of the State only. Even when dead they still serve, as the corpses are used for fuel. (Unfortunately the Author does not tell us how they are ignited, as no corpse, in my opinion is very inflammable.)

"Land under England" is a very depressing tale, and not at all plausible. Neither the trip into the subterranean World, nor the adventures which befall the hero are very convincing.

Some More Information About Mu

COSMIC FORCES. By James Churchward, published by the author, distributed by the Baker & Taylor Co., New York. 268 pages, \$3.00.

This is the fifth book of Mr. Churchward series of books on Mu. It is quite a remarkable yet a somewhat queer book. It seems to

be a summing up of what Mr. Churchward believes the ancient scientists of Mu believed. Mr. Churchward tries to show and prove with elaborate charts and diagrams and sketches and pictures, that the existing conceptions and ideas of geology are all wrong (Remember Mr. Fort's efforts). However it is up to the much learned Geologists to defend themselves. It is not up to me. As a scientific "hat-in-the-ring" book it is quite interesting and though I do not share his views still I do respect his earnestness and the sincerity of his convictions.

Gold and More Gold

BEFORE THE CONQUERORS. By Hyatt Verrill, published by Dodd Mead & Co. 286 pages. \$2.00.

This is the story of Bob, an American boy, whom we accompany with Mr. Verrill, as an expert guide, on a treasure hunt in South America. Bob certainly has beginner's luck, *plus*. Not only does he dig up lots of gold and silver treasure, but also some even more valuable antique Inca textiles, which had been buried for centuries in a stone chest. We learn that hieroglyph-covered stone tablets are even more valuable than gold and silver artifacts, in fact we become enthusiastic archeologists as we read on, and we are sorry that we cannot join Bob's party in their travels through Inca land.

The book is authentic as it is written around Mr. Verrill's own experiences as an explorer and archeologist. One is apt to learn more about the history of the Aztecs, Incas, Pre-Incas and Mayans by reading this book than by listening to an extensive course of lectures.

"Before the Conquerors" is strongly recommended.

More Gold

THE HOUSE OF DAWN. By C. E. Scoggins, published by D. Appleton Century Co. 281 pages. \$2.00.

Mr. Scoggins has already several good books to his credit. The present book deals with the final recovery of the "Peje Grande" or the "Big Fish" meaning the fabulously enormous hoard of gold hidden by the ancient Incas, before the super-bandits of Spain could get it. Red McDougal, an elderly engineer, whose dream of building a railroad clear across Peru into Brazil has never come true, and who has become an eager student of ancient Spanish manuscripts, discovers a clue to the whereabouts of the legendary "Peje Grande." He believes that

it is located in the uncharted regions on the Eastern slopes of the Andes, near a mountain shaped like a nose with a deep cleft. (Afterwards this mountain turns out to be solid high grade gold ore.) A rich American tourist, with whose daughter the engineer's son has fallen in love, finances the expedition. After a hazardous trip they find the "Peje Grande"—tons and tons of golden artifacts, sunk in an artificial lake. Though captured for a time by a troupe of imported American gun-men led by one Slick Harvey, a disreputable oil-promoter, everything comes out as it should. "The House of Dawn" is a gripping tale of high adventure, fascinatingly and well told. Worth reading.

The Firm of Maccaulay Presents

THE STUFFED MEN. By Anthony Rudd. 250 pages. \$2.00.

This is one of the rare murder and mystery yarns, containing enough science, so that it could almost be classed as Science-Fiction. The Yellow Peril has invaded the Empire State. However the peril is not general, it only threatens the possessors of "Ming" porcelain. Peculiarly none of the extraordinarily valuable specimens are stolen, but they are most thoroughly and ruthlessly destroyed. One very valuable collection is blasted to smithereens by dynamite, others are just smashed to dust. The unfortunate owners die of the Saffron Death, which as Science reveals is brought about by the introduction of the spores of a yellow fungus which grows with incredible rapidity in the human system, clogging the arteries and filling all body cavities to the bursting point.

Certain clues lead Masters, a private snooper, to the "Brick Wart," an architectural monstrosity, a veritable crime in stone, committed by one Bryson, a retired brick manufacturer. It seems that said Bryson, by stealing the priceless formula of how to make "Ming" porcelain, interfered seriously with a gang of "Ming" fakers operating in China, who so far had the World monopoly on "Ming" ware. Business is business, and as the Chinese gang did not believe that competition is the soul of trade, they forthwith employed their own methods of eliminating Bryson, his "Mings," as well as his customers. But Masters masters them. The deadly fungus infection he cures by "Radio Fever," and the chief of the Chinese gang goes "on high" as the Chinese express our "going west" *via* the electric chair.

The story is unique in its sustained weirdness and well worth reading. Only, don't take it seriously.

DISCUSSIONS

In this department we shall discuss every month topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

An Australian Reader Who Likes AMAZING STORIES Gives Us His Views

Editor, AMAZING STORIES:

I wish to compliment you upon your splendid magazine *AMAZING STORIES*. I am a regular reader, and have some dozen consecutive numbers of your review and a few of the back numbers.

I will now consider the judging of your magazine. Science fiction stories are the different kind of literature, the spice of life as it were, and being of such a different variety of one story towards another, are the real gems of literature. This comes from the heart. I find the science in them refreshing, and the theories are mostly logical, no one can prove some of them impossible or otherwise. Compared with some science text books they give good educational value, as well as entertainment and relaxation after the day's work, which cannot fail to hold interest to the last word.

I am a reader of no complaints, believe in having a broad view on everything, if the magazine can be bettered I leave it to the editors' decision. The illustrations are of great attraction, especially the frontispiece. The type is just right, and causes no strain on one's eyesight, and as the typical Australian would say the stories are the dinkum (real) goods.

Now for a kind word to the authors. The persons who conceive such plots and ideas must have a wonderful sense of imagination. I find it very hard to pick the stories I like best. Some of the ones which fix themselves in my mind are "The Metanicals Series," "Cat's Eye," "The Atom Smasher," "Times Mausoleum," "The Metal Doom," "Hibernation," "Lost City," "Peace Weapons," and not forgetting "Life Everlasting," which is unique in itself, but then Dr. Keller writes winners all the way.

However I have strong objections to the majority of the letters to the Editor, which are always complaining of something or other. The Editor cannot please everyone, and if they imagined themselves at the Editor's desk, they could not do any better, especially in judging the right sort of story to please all of the readers. Those who are not satisfied, take my advice and leave criticism to those who know something about the

matter—the publishers. Or endeavour to write a better science story, if they can?

In Australia your magazine is read and appreciated by thousands of regular readers in all walks of life. This is no exaggeration on my part. Many of my own friends buy your magazine, most of which I have loaned copies, and who are now firm adherents to our magazine *AMAZING STORIES*.

As regards myself I am a young Australian age 18 years and am interested in the study of foreign languages. I understand besides English, German, French, and Italian, quite well. I will mention that I have read several science stories in the German language and a few in the French language. Of course they are extremely interesting, but sometimes are a little boring, because of all the technical details contained in them. This is especially in the case of German ones. Shortly I intend to try learning the Spanish language, and if any of the readers who understand Spanish could possibly lend me some aid in this respect, I would assure them of interesting correspondence. I am also open to discuss scientific stories, or anything of interest.

I am anxious to secure back numbers of any science fiction magazines; some of *AMAZING STORIES*, before the October, 1933 issue. All *QUARTERLIES* and any books dealing with science fiction stories. I will buy, or give unused current Australian stamps, or what you wish. Give if desired English science fiction stories.

Trusting I make a favorable impression upon all, with best salutations and long life to *AMAZING STORIES*.

ERNEST NORMAN DILLON,
138, Goderich Street,
Perth,
Western Australia.

(Your objections to the "majority of the letters to the Editor" are not founded on a good basis. We sometimes hesitate about publishing some of them, as if it were in many cases a sort of self-praise to do so and your letter is a good example of the compliments we receive and we thank you for them. It is very pleasant to find a person of your age interested in language study, to which the writer has given a great deal of time.—EDITOR.)

A Real Scolding Letter Which Perhaps We Need

After reading quite a number of your magazines I have a few criticisms to make. First I might as well tell you that I personally do not think that your magazine is as good as either of your competitors. Its biggest fault is that it is crammed full of the weird or lower type of story that has very little if anything to do with science fiction. You might do well to change the name of your magazine and call it "Weird Tales." Second, your illustrations are terrible. If you don't think so compare any one of your issues with that of any of your competitors. But after all you do publish a good story now and then (to break the monotony I suppose). As examples "A Legend of Pose Nega," "Sinners of Time," "Kingdom of Thought," "Martin Moel," "Moon of Arcturus," and "Space War." Some of these were very good. I have written this letter in the hope of getting a better AMAZING STORIES magazine in the future, but I had it in the wastepaper basket before I read to the end.

ERNEST ROTHWELL,
517 And Street,
Pendleton, Oregon.

(In some of the comments on perhaps too complimentary letters, we intimated that it might be good for us to get some scolding, and here it comes. But you soften it by citing some stories which you approve of. It is not easy to get a quantity of good stories all full of science; we find it a sort of problem to solve. We omit what you say about the art work ad we think that it is a little too personal. EDITOR.)

Inspiration and a Moral in a Story That Did Not Spoil It

Editor, AMAZING STORIES:

"Meteor Miners," in your December issue was super-excellent plus. I wonder if any of the readers noticed this angle of the story? There was a moral to it. An excellent moral, depicting the highest type of courage, the courage to fight bravely against tremendous odds—and WIN!!! And perseverance, the will to never admit defeat, never to get discouraged and give up hope. To let nothing, not even age, deter you from your goal. In short, besides the science-fiction, it shows all those characteristics which make a great man. Yes, "Meteor Miners" was an excellent story; may AMAZING publish many more like it.

"The Fall of Mercury" was O.K. "Draught of Immortality" was very good. It also had (as you mentioned in your com-

ment under the title) a very good moral. "The Symphony of Death" was excellent, but was a trifle far-fetched.

"Restitution" was very logically told, and in an interesting manner.

Make AMAZING a monthly again.

A. B. DANNER,
5527 Chancellor Street,
Philadelphia, Pa.

(There was a lot of excitement in the description of the heroic old meteor miner rescuing his captain, who had felt it his duty not to expose the old friend to the dangers so well depicted by the author. Sometimes a moral brought in by main force tends to spoil a story from the literary aspect but that has not befallen either of the two stories carrying a moral each. EDITOR.)

Appreciations in Abundance for Our Stories. We feel that you are just in what you say.

Editor, AMAZING STORIES:

The cover and editorial of your December issue are O.K.

"Meteor Miners" was very good. Eshback has IT when it comes to writing an sf. story. I have always enjoyed his writings.

"Fall of Mercury" was very, very good. Miss Stone has produced a good narrative.

"Draught of Immortality" was excellent. A. W. Bernal's story will go down in science-fiction as a classic.

The "Symphony of Death" was very good. Mr. Palmer is becoming quite prolific—and his stories are good.

"Restitution" was a good tale. Medical stories provide variety in the magazine.

Concerning the serial question, I am rather inclined toward having serials, because some of the best stories have been serials and probably will be. However, I realize that, since you are a bi-monthly, it would take six months for a three-part serial to terminate. Therefore, the only logical solution is *for you to become a monthly again*—and to remain so hereafter.

Yours for an AMAZING STORIES monthly,

RAYMOND PEEL MARIELLA,
5527 Chancellor Street,
Philadelphia, Pa.

P.S. Correspondents please note new address.

(Please accept our thanks for your appreciative remarks. Now if we can find one we must put a real scolding letter next to yours—but suppose we cannot find one. We are hoping for a monthly publication to be resumed; as we all know the depression or the new deal has brought about some queer changes. EDITOR.)

Amazing Stories in China

Editor, AMAZING STORIES:

Some years ago, it seemed, a house-to-house salesman peddled some of your magazines—AMAZING STORIES—out here, I believe. It was then of a much bigger size. But like the fates of all periodicals which made their appearances here—they come and go—few found permanent places on the news-stands, libraries, reading halls, homes or on any shelf. Those fortunate enough to make good impressions upon the public may be still gleaned from the shelves or show-windows of book-sellers out here, as they, too, have learnt from bitter experience, long idleness on the shelves means total loss.

Last week whilst crossing over the harbour, I picked up a stray copy of your magazine in the smoke room, evidently left behind by some equally fantastic stories thrilled youth. As it was free of charge and being a clean copy, I sat down and lo and behold! I devoured one story after another. Happily they turned out to be great reading materials. The stories are good in that they are radical departures from the same stuff—the plot, back-ground and all—that are daily being fed to the general public as exemplified by other magazines. You are to be congratulated! You will notice I say “happily they turned out to be great reading materials.” They had better be so, because I spent the greater part of three hours on them, for nothing, and I intended to send along a series of cuss words and epithets. Your compositors will have a hard time at getting new types on Oriental lingoes and possibly they could never be printed, because I intended to have the languages heated up so strong that the ladies will blush crimson and other looking for their ear-drums. Come to think of it, Carl Laemmle of Universal Film Corp., who specializes on weird, hair-raising and spine-shivering pictures, could use some copy from your stories. In that case I would advise you to slam down a million bucks straight and no discount for cash either—for the sole rights of using each of your stories printed in AMAZING STORIES! How’s that, eh?

I would like to hear from some readers.
Keep up the good work.

FERDIE F. SANTOS,
13 Mosque Junction,
Hong Kong, China.

(Such appreciative letters as yours mean a great deal to the staff of AMAZING STORIES, who are working and striving to please a public, from whom they sometimes receive kind letters and sometimes others not so kind. We are afraid the film people will

have to come to us rather than for us to go to them. We thank you for your appreciation of our authors’ work. We are the editors but the pabulum for the readers is supplied by our authors for the most part. EDITOR.)

A Favorable Letter from an Australian Correspondent.

Editor, AMAZING STORIES:

I have just finished the third episode of “Liners of Time,” by Fearn; it gets better as it goes on. “The Inner World” is a very interesting yarn in its way, it puts a new conception on a much debated subject, though a bit far fetched, yet well written. Harl Vincent had come to the fore in “Parasite.” I personally think it compares to “Liners of Time,” “Space War” by Neil R. Jones is a good continuing serial to the Prof. Jameson series. They get better as they progress.

The cover to the July issue (which by the way is the latest) is not bad as an illustration of the yarn “Inner World.”

Why is there a lot of argument on the size of the mag. You the publishers ought to know more about it than us the readers, so why should there be such an outcry over it all? Reprints are good in their way, but I would suggest one a year as a reprint, one of your best of the year’s current series is my idea. Use my suggestion as you will.

Wishing you all the best in future stories.

J. ABRAHAM,
91 Australia Street,
Camferdown,
Sydney, N.S.W., Australia.

(For some reason we always receive the kindest letters from other countries and notably from Australia. Our magazine is now the standard size of the highest grade magazines published in this country. The larger size seemed more adapted to a weekly journal rather than to what was to say the least, supposed to be a literary monthly. The new size now seems perfectly natural and convenient. EDITOR.)

Copies of Amazing Stories for Sale

Editor, AMAZING STORIES:

I have received many requests for back issues. I am writing to say that I have several back numbers to sell. I would like to get twenty cents for monthlies and twenty-five cents for quarterlies. They will be sent “postage collect” for orders less than six numbers.

WILLIAM MUEH,
3285 W. 47 St.,
Cleveland, O.

More About Wild Bill. We wish we knew why he takes such an appellation.

Editor, AMAZING STORIES:

If I may, I'd like to put in a word to Wild Bill Hoskins, whose letters are usually intelligent and fair enough to merit discussion.

All right, Wild Bill. In your letter which appeared in the October issue of *AMAZING STORIES* you have the temerity to jump all over Fearn for his time concepts of *LINERS OF TIME*. May I point out this is as open to criticism as *AMAZING STORIES*, pre-Columbus air space travel. Dust off your elementary concepts of simple fourth dimension and let's do a little primary thinking.

You, of course, being a stf. fan are all too aware of the infinity in abstract dimensional measurements; i.e. the first dimensional being an abstract line drawn through infinity of points, the second being a line drawn abstractly to the right angles of the first and acting through infinity of firsts; the third acting through infinity of planes and the fourth acting through at right angles an infinity of abstract cubes. That's elementary, but let's pursue the logical progression of the dimensionals which we have established. (For obvious reasons I leave out all mathematical symbols and attempt to convey the sense of those symbols in words.)

Each time, we see, there is infinity of its inferiors through which there acts the abstract and superior dimensional, and so at right angles to an infinity of tesseracts there must act the fifth dimensional and so on unto an infinity of dimensionals. This particular concept is a little beside the point, but it is necessary in order to show that tesseracts, that is, time lines drawn at right angles to abstract cubes, are infinite numerically.

As an absolute, that is an abstract dimensional, time would seem to be an inclosed supersphere or tesseract, eternal and yet simultaneous and instantaneous, since flow of time is only the manifestation of the fourth dimensional acting through the third. Now, if a superior absolute acts through an inferior, so too an inferior progresses through a superior. (Sorry Editor, I'm trying to put it as briefly as possible so as not to take up too much space.) If a second dimensional should progress through the third, it would certainly show the effects of that progression to its peers, so then the third in progressing through the fourth certainly shows the effect of its journey along the time line-age. So by this very pragmatic example we establish the fact that a man does progress in actuality along a time line.

But, we have established the fact that

the time lines are infinite, and also established that the cubes are abstractly infinite. Therefore the fourth dimensional acting through an infinity of cubes proves that infinity of time lines. These time lines, to the abstract is an infinity numerically. And therefore each man progresses through an infinity of time lines. These time lines, to bring it down to pragmatism, are the subjunctive. The cause-effects of "if". In the absolute then, all men, all things abstractly follow out to infinity not only each cause-effect which *has* happened, but which *could* happen. That which *could* happen corresponds to the infinity of time lines, so that which could happen is infinite.

Now that which *does* happen as opposed to that which *could* happen depends upon the registering of man's consciousness in his choice of these time-lines which he wishes to make indicative instead of subjunctive. This would seem to prove freedom of man's choice, and since in the abstract he is doing all things at all times to the infinite, therefore he has the freedom of choice in consciously registering which time line out of the numerical infinite he desires.

Therefore: Fearn's concepts of hopping from place to place in time are no more false than was the opinion of certain naturalists of olden days who knew Columbus couldn't do it.

And isn't it simple? And aren't you sorry, Wild Bill, that you wrote before you thought?

By the way, if you want to go into this more fully, you might write me direct.

W. CLIFTON,
Sentinel Hotel,
San Francisco, Calif.

(This letter is distinctly comforting. We can only claim to be entitled to the Westerner's epitaph. "He did his d—dest; angels could do no more." You certainly are plumbing the depths with what the old time sailors call the "dipsy" lead—i.e. "deep sea."—Editor.)

Thanks, Editor, for *AMAZING STORIES*.
A Reader Specifies His Age in Writing To Us

Editor, AMAZING STORIES:

Before starting the main subject of this letter, I should like, through the medium of your columns, to explode a fallacy prevalent among those of your readers who have written to me as a result of the publication of my last letter in your magazine. This is with reference to my age. I can divide my correspondents into two classes—those who think I am in an advanced state of senile decay and those who believe me to be a very backward member of a kindergarden class.

Therefore, let me say now that I am just 21, in full possession of my faculties, and I love children. However!

The July issue was one of the best that I have read for a long time. A fine collection of authors too. It is with regret that I observe "Liners of Time" is drawing to a close, but the "Inner World" is a worthy successor. Of course it is blasphemy to criticise any Professor Jameson story, but sometimes I rather wish Mr. Neil R. Jones would curb his imagination a little and not bewilder us with galaxies of rays, counter rays, gigantic mechanisms, and the other paraphernalia which unfortunately seem to be an essential part for the composition of futuristic stories. "The People of the Arrow" could have been a splendid story, but why, Mr. Miller, did you make it read like the ravings of a fever stricken man? Still you certainly can describe a good stand up fight, if your hero did seem to have made a remarkable recovery from his injuries!

Until next month, then—

GEOFFREY WELKS,
3 Inglewood Mans.
West End Lane,
London, N.W. 6, England.

(Your letter is quite amusing and characteristic [we presume so, at least]. Poor Professor Jameson and your other subject of censure the "Arrow person." We rarely get an unfavorable letter from your country, but yours is only half unfavorable—you do stand up for AMAZING STORIES.—EDITOR)

**Progress leads to Perfection, but as long as
Progress is possible Perfection has
not been reached**

Editor, AMAZING STORIES:

I want to tell you that although I don't rate AMAZING STORIES as THE highest stf. mag., I do rate it as making the MOST IMPROVEMENT since October, 1933. While the other mags have made small improvements, each issue of A.S. has been much better than the last.

Another thing, if you will be kind enough to print this, I will appreciate it very much. I have set up and printed a list of the elements, with their atomic numbers, weights, and their symbols. It is printed on good bond paper, and I will send two of these lists to anyone for the small charge of five cents for postage, etc. Thankx, or as the Esperantist would say it, "Dankon."

I have enclosed a few of these, for the editors.

An idea has come to my mind that I believe might help you. On the last July issue I believe it was, the cover picture was taken

from a serial, and one that had already been started, at that. For a person who was unfortunate enough as to not have the other parts of the serial, the cover was no good to him, at all, except maybe for the art, although I don't particularly care for Morey's drawings. (Everyone has their own opinions).

Altogether tho, we really can't kick much about A.S., at that. (The price is slightly high)

Well, here's a toast to bigger and better
AMAZING STORIES

ROY TEST, Junior,
'AMATORA ESPERANTISTO'
325 East 68th Street,
Los Angeles, California.

(The heading of this letter must serve as its comment. We wish to thank you for your copies of the list of the elements. They are excellently done. They are indispensable to the chemist of the present time.—Editor.)

**Appreciation of our Efforts Which are Most
Welcome and (We Hope) Deserved**

Editor, AMAZING STORIES:

After reading the Discussions, I feel that I, too, must put in a word. I much prefer the smaller size mag. It's easier to carry.

As for the drawings, I like them. After I read a written description of some creature, I always turn back and look at the artist's conception. The mental picture is then much clearer.

The first A. S. I ever read was "Revolt of the Pedestrians." That started me reading the stories in the magazine. Who wrote this story and in what issue did it appear? Can you reprint it?

My favorite authors are: Jack Williamson, Verrill, Breuer, Harl Vincent and David H. Keller. The stories I've most enjoyed reading are: "Stone from the Green Star," "Posi & Nega" all of the Prof. Jameson stories, and "Power." I've heard so much about the "Skylark" stories that I'd like to see them reprinted. I don't care much for the Verne reprints. I like to read the more up-to-date authors.

Good luck to you and may I continue to read A. S. with the same absorbing interest as now.

BEATRICE KRAUS,
3400 Milwaukee Street,
Pittsburgh, Pa.

(We appreciate your good wishes. As you can see by reading Discussions, we have good reasons for appreciating such letters as yours. "The Revolt of the Pedestrians" was published in AMAZING STORIES of February, 1928. It was written by David H. Keller.—EDITOR)

Wild Bill Answered by an Author he Finds Fault with

Editor, AMAZING STORIES:

I have just noticed the observations of one "Wild Bill" Hoskins in the October AMAZING concerning *Liners of Time*. After careful thought I have arrived at the conclusion that Wild Bull—sorry, Bill—did not particularly like the story. Indeed he detested it so much—apparently only the first installment, too!—that he took upon himself to examine dictionaries, ask Dr. Sloane for trays and tumblers, and generally examined the birth of the English language. For a disliker of Fearn he is certainly enthusiastic.

I have to confess that Wild Bull has made several direct hits in my armour—mainly in the matter of time travel. I wonder if he has ever read other time stories? Perhaps in those he has found the perfect method, but I very much doubt it. If he had he would presumably be writing his letter to, AMAZING somewhere in 3035, where he wouldn't be pestered with my yarns any further! I have no intention of explaining how Time can be traveled any further than I did in *Liners of Time*. No doubt if Mr. Bill will again read the Introduction he will find the explanation of the trouble that seems to worry him.

Regarding the "Dissembler." I was quite aware of its real meaning when I wrote it down, and I agree it should be "Disassembler"—but where is there the reader who wants to twist a tongue round that every time? I called it "Dissembler" purely for convenience, and I hasten to assure my energetic critic that I did not write *Liners of Time* under the influence of one of my own rays, but beneath a very ordinary electric light during a particularly cold winter.

I dispute the fact that the glider atmosphere I depicted would not remain at a definite level. A gas several times lighter than hydrogen would, I admit, reach as high as it could, but once there it would retain a definite level. I made no mention anywhere of the height of this level, nor do I appear to have stated the glider was made of metal. Perhaps though, Mr. Wild Bill has discovered something in his copy of AMAZING which was not included in the four other copies I possess.

Concerning the centrifugal force in the restaurant, I agree with Wild Bill that I was wrong there. I knew it when I wrote it, but for the sake of elaboration I used such a device. My explanation could have been clarified greatly by explaining, perhaps, that the food partaken of was covered with metal lids, duly magnetized—and the drinks, too, if you like, though none were mentioned

in the restaurant incident. This latter fact obviates, I hope, the unpleasant necessity for our honorable Editor to mop up the floor after Wild Bill's interesting experiments with "flipping trays," as he so deftly terms it.

I notice, whilst I am about it, that Mr. Wild Bill mentions in his letter an "ultimate penultimate." Perhaps whilst he has that dictionary of his in operation he might look up penultimate again. It means, of course, the "next to the last." Clearly then it cannot be anything else but *ultimate*. Or is that too involved, perhaps?

Further, how does the movement through space affect the liner in Time? Since it only moved a distance of some 1,000 ft. at the most in order to reach the time-band, I do not see the point. A thousand feet is neither here nor there when time is mapped out ahead, as it was in the story. As for keeping up with the earth during her movement through space, I advise Mr. Wild Bill to read the second paragraph on page 39, first part of the story. Mayhap he will be clearer, then. Again, you suggest screw-propellers. I do not agree that they would be more useful; the plunger device should be possessed of greater power. Anyhow, so long as the old tub got along, who cares?

Lastly Mr. Wild Bill accuses me of not writing science-fiction, and remarks that the accent should be on the fiction. Evidently he overlooks that we authors write science-fiction (a compound word, with both words given the essence of the whole). I take this observation to mean that science and fiction are equally combined. I freely admit I do not strive for scientific accuracy by any means; indeed I ignore possibility altogether if I can get a thrill by being particularly fantastic. It is a fact, in case Mr. Wild Bill is not already conversant with it, that those who break every known rule, in any walk in life, usually get the biggest following. I don't break *every* rule of science, but I certainly shelve facts many a time—and, Mr. Bill or otherwise, I shall continue to do so where I think it necessary.

After all, considering Mr. Wild Bill has only criticized Part I of the story, I hardly feel he is able to give an apt summing-up on the entire work—not, however, that I am suggesting he would be incapable of such a feat.

In the whole I would suggest that Mr. Wild Bill write a time story about splitting himself in two and voyaging to past and future simultaneously, wherein he can save himself being killed by the gangster who is about to end his life. I assure Mr. Bill he will have plenty to think out. I shall then

be very happy to hand to him, if he deserves it, a most constructive criticism.

Lastly Mr. Bill has consigned to me a razzberry and some nuts. At least I may take fresh hope from these small but nevertheless edible morsels. Until Wild Bill has solved the cause of the English language and completely solved how to place himself in seventy different times at once, I shall remain here to make him crazier (his own words, I believe.)

JOHN RUSSELL FEARN,
Langstone, Blackpool,
England.

(We generally feel that so long a letter as this takes care of itself. Wild Bill has drawn considerable criticism on his own devoted head, and here an author answers the gentleman with the strange appellation indicating wildness, and does it in a very clear and definite way. It is always very interesting to receive so long and interesting a letter, especially from an author. Perhaps we should add "and to Wild Bill."—Editor.)

Good Words from England, Dimensional Nature of a Shadow

Editor, AMAZING STORIES:

Congratulations, Editor! The magazine is fine. Best wishes to the authors. Science fiction holds the line. The stories are magnificent. The setting is just great. I find I still enjoy them although they're two months late. Who suggested sacking Morey? I'll spiflicate the brute. His illustrations hold the eye. Please don't give him the boot. And in conclusion may I say brickbatters should be shot. Although they know the mag is O.K., they try to say it is not.

Please tell me whether a shadow is two dimensional or three dimensional. I corrected the editor of *Practical Mechanics* but he still maintains that it is two dimensional.

Now then Mr. R. McNairn, "Lend me your ears." An editor is responsible for the policy of his magazine and if he quotes his views, he is quite entitled to say "we".

In reply to the remainder of your letter, words are not so important as you seem to think. They are used to express ones thoughts and if in using a word such thoughts are conveyed, it matters very little as to the spelling or pronunciation. Please consider yourself annihilated!

GEORGE E. MOIR,
13, Gorseway,
Rush Green Estate,
Romford, Essex.
England.

(Accepting Webster's definition, a shadow may be three dimensional or two dimensional.

Words are certainly important. The spelling or orthography is important. In English spelling the arbitrary and irregularities are unfortunate, yet phonetic spelling affects most of us very disagreeably. We appreciate your favorable criticism of Morey. He deserves all you say about him.
—EDITOR.)

About Several Authors and About Science in General

Editor, AMAZING STORIES:

In my humble opinion the December issue of AMAZING STORIES was a decided improvement over the October issue.

"The Symphony of Death" was a pleasant surprise. While I have read only two other stories by this author, I was already beginning to class him as hopeless. Keep up the good work, Mr. Palmer.

"The Draught of Immortality" took second place. While not science fiction, an occasional story of this type is welcome. An exceedingly well written story.

The "Fall of Mercury" was third. I was a trifle disappointed by this story. Miss Stone has done much better work than this in the past. There were too many fantastic gadgets in this story, such as the time-ray, and the size-changes, without a shred of rational scientific explanation in support of their far-fetched powers. This stuff belongs with the rainbow-hued death-rays of another day. What really "burned me up" about these nonsensical doo-dads was the fact that they were not even necessary in the development of the plot! She tried to crowd too many unnecessary particulars into one plot. The same thing was wrong with "Liners of Time." "The Meteor Miners" was average, not good not bad. "Restitution" was very poor, both in plot and in development.

What happened to the November issue? Is the Quarterly going to be started again and if not, why not?

I have noticed one thing in the Discussions columns. By the time a letter is printed, it's ancient history. Why not print letters in the issue after they are received?

ROBERT REDDY,
3000 Connecticut Ave,
Washington, D. C.

(AMAZING STORIES is now a bi-monthly. The QUARTERLY is quite irregular in time of publication. The space assignable to Discussions is limited and this often has the effect of deferring the publication of our correspondents' letters. The saving clause is that their interest does not depend necessarily on early publication.—EDITOR)

A Very Amusing Contribution to Discussion

Editor, AMAZING STORIES:

Now the August issue was nice work! The cover, from "The Golden Planetoid," was dostomctove; strange, I've always wanted to see wither a golden, a silver, or a white cover on a science fiction magazine. Last year I saw a white cover (not yours, I'm afraid); this year a golden one. Next year—?

The story itself wasn't so hot. Remember the world's off gold. I'm off Coblenz. And don't say, as you did to T. Macdonald in this issue; "Wait nine or ten years and you will like him!" I've already done my 'stretch' and still don't like him, in short stories. Now, in serials and Quarterly-length novels I revel in him. Oh that 'Sunken World'! Let's have Coblenz in Russia with his hero. (I wish he would not always exile them.) But don't let's leave Thos. Macdonald yet. There was far too little of him in this issue. Why, oh why, 'omit a few words of this letter'?? Perhaps you had to. O.K. That's all right. But at least see that what's left makes sense, please! Look at the illuminating sentence (sentence?) "The 'Sunlight Master'"—Something wrong somewhere, no? Suppose that all that is printed of this sentence is 'is printed of': who'll get any sense out of it? Still, if I'm wrong, I'm sorry, folks, I apologize.

No doubt the Editor has a hard job, all considered. However, I can't help remembering Lewis Carroll's story about the famous "Alice" wherein Alice met Humpty-Dumpty. He, you'll recollect, made words mean whatever he wanted them to mean, making one word do the work of dozens of totally different words and sentences. I'll use his word and say to you: "Impenetrability" and the moral of that is: "If you don't print understandable lumps of letters, you soon won't have any to print."

There's nothing more calculated to cause a science fiction fan to lose interest in a magazine than for him to feel that the Editor doesn't care two hoots about him or his opinions. Even if the Editor doesn't care, he'd better not show it or he'll have one supporter less.

Now, I don't know Mr. Field personally, but if I looked into the August issue and saw, in the comments on my letter, "You should always date your letters" I shouldn't feel too good. I'd think 'somebody was trying to start something'. It's hardly polite, is it? (Even if true, and is it?) Just out of cussedness, I haven't dated this letter, but don't try anything; I've got you covered. The date's October 12th, and, now you know, what good does it do you?

Please, please try to appreciate the readers' points, and don't be too dogmatic. Can't you see that a host of critical letters shows a lively interest in AMAZING STORIES? A discussion column full of 'satisfied' letters would ring the death knell of A.S. and, indeed, all science-fictiondom (Editor, did you murmur, "Who cares?")

If a fan writes to say "The Spotted Planet" was tripe, don't say, in effect, "Why you dirty little so-and-so, 'The Spotted Planet' was perfect, because I (we) liked it. Scr-ram!" Note his objections, try to meet them, or instigate discussion. What this column needs is a real hell-for-leather argument.

O ye unknown Smiths and Robbs, arise! Come to that, where the ding-dong are you hiding—Alive?

Here—I'll try to start off a discussion (Sardonic laughter from the deeps) I hold that science fiction still has at least two themes to use as revolutionary as the time-travelling theme was 'way back. One I intend to use myself some day—the Seriality theory. The other is "After death what then?" Look at its possibilities! But—religion rears its head. Will the magazines dare to print it? The authors to write it? Readers to like it? Are we sufficiently advanced for it? Religious dogma lies hidden in the most ungodly of us—it's ingrained. Personally, I say "Yes, we can take it"; BUT what do you say?

And you? And you? Write up about it, either to Discussions or to my home address.

But write!

SIDNEY L. BIRCHBY,
38 Nightingale Avenue,
Essex,
England.

(This letter may fairly we think be considered an oddity. Reading between the lines as they say we think that the writer, perhaps without realizing or suspecting it is a bit sensitive. But he does write a most characteristic and amusing letter, even if it is not always easy to follow his train or trains of thought. We particularly desire to keep out of anything in the way of a religious discussion, and fail in that regard to coincide with you, if we fully understand what you mean. Perhaps we do not. By all means write again and let us know if your wishes for correspondence have been realized.

Many letters have been published asking for letters but we are not told how effectual they have been, at least that is the rule followed by most of our correspondents. —EDITOR.)

A Story about Termites probably about Ants
Editor, AMAZING STORIES:

I am writing to you relative to a story published in *AMAZING STORIES* magazine, some years ago.

The story was about Termites—in which Termites grew to such size that they in turn conquered the world.

In my business, which has to do with pole inspection, I have had to look into the Termite situation from a serious side. However, as these insects are rather a hobby with me, too, I would like to gather some material that deals with the humorous or fantastic side of the picture.

If a copy of the above mentioned story is available, I would appreciate any information you have to offer on the subject. As far as I can find out it is the only story which has followed Termite problems with the trend of thought of most of your excellent stories.

JOHN I. LEETY,
 236 Park Ave.,
 Ben Avon, Pa.

(The story you are thinking off was probably "The World of the Great Ants," by J. Hyatt Verrill, which was published in our *Quarterly*, Vol. 1, No. 4 Fall of 1928. This was about ants of great size, in accordance with your letter, but they were not termites. We have published other stories about ants, when a human being was changed into an ant and lived with them for a while, it was the subject of several stories and gave quite vivid accounts of the ways of ants. You must have had experience of the destructive white ants (so-called); the case in question is a little like humanity of today, the white race is more destructive than those of darker hue. We shall hope to hear from you again. EDITOR.)

A Flattering Letter from an English Reader
Editor, AMAZING STORIES:

Before I start I should like to introduce myself as a reader of your exceptionally enterprising and interesting magazine.

I am not an old reader and I can't claim to be a subscriber since 1930 or some such year in the past, though I often wish I had, but what few copies I have read have certainly held me in various stages of rapture (with a few exceptions).

I am amazed at the fact that there is no science magazine on sale in this country. We have almost every other type of periodical in existence. I don't think the reason for this is because the majority of people aren't scientifically inclined, on the contrary, most people here delight in anything mechanical or electrical, you can tell that by the num-

ber of people one always finds at the Science Museum here in London.

And yet when I visited your lovely country back in 1932 I seemed to find that most people didn't know how to repair an electric light fuse. Still perhaps all this is beside the point.

Before I close I should like to criticize one or two of the stories in the August edition. "The Kingdom of Thought" was in my belief at the bottom of the lot. It read very much like a fairy tale. I shall keep it nevertheless and read it to amuse my children.

The 'Never Dying Light' was pretty fair, at any rate unusual, the author certainly has an imagination, which, I am grieved to say a lot of authors have not.

And now in conclusion, I should like to wish your publication every success it merits.

Also I would like to correspond with any reader of *AMAZING STORIES*. It is always nice to have personal criticisms.

It may interest you to know that unlike other readers in England, I never have any difficulty in obtaining *AMAZING STORIES*.

LOUIS ALSTON,
 31 Kerringhill Road, Upper Claxton,
 London, E.5, England.

(It is a comfort for an editor to get such letters as yours and it seems as if English and Colonial readers appreciate our efforts perhaps to a greater degree than we can claim to merit. By 'Colonials' we refer to the dwellers in the Antipodes—perhaps the term is not quite correct; we are using it to comprehend Australia and New Zealand, from which countries we get many letters, generally encouraging ones. EDITOR.)

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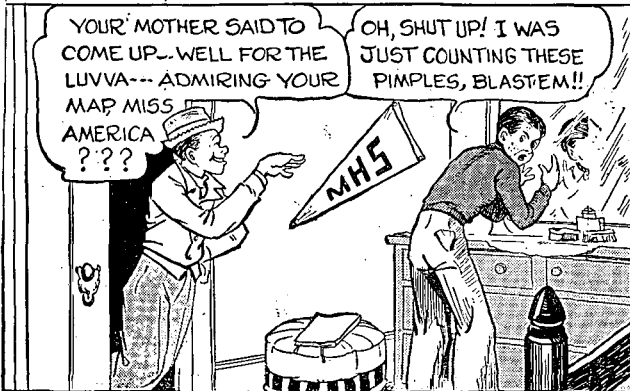
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wasn't
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glands develop. This causes distu-
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